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Part 2

MODIFIED FINAL JUDGMENT

HEARING

BEFORE THE

SUBCOMMITTEE ON COMMUNICATIONS

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

OVERSIGHT HEARING ON THE MODIFIED FINAL JUDGMENT

JULY 14, 1988

PART 2

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MODIFIED FINAL JUDGMENT AND OPEN NETWORK ARCHITECTURE

TUESDAY, JULY 14, 1988

U.S. SENATE,
SUBCOMMITTEE ON COMMUNICATIONS,
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:41 a.m., in Room SR-253, Russell Senate Office Building, Hon. Daniel K. Inouye [chairman of the subcommittee] presiding.

Staff members assigned to this hearing: Tom Cohen and John Windhausen, staff counsels; and Gina Keeney, minority staff counsel.

OPENING STATEMENT BY SENATOR INOUYE

Senator INOUYE. Two major common carrier proceedings are now before the FCC and it is clear that the Commission intends to reach a decision on these matters by the end of this year.

In one proceeding, the Commission is reviewing the open network architecture plans filed by the Regional Bell Operating Companies. In the other, the Commission is considering replacing the rate of return method of regulation with the price cap approach.

Because of the critical importance of these two proceedings to the public interest, I believe it is imperative that the Senate review their direction and determine whether legislative intervention is required or justified. And that is why we have scheduled this morning's hearing on the open network architecture plans and their relation to the modified final judgment.

The price cap hearing will be held on August 2.

The subcommittee has long been interested in the modified final judgment, and last December, it held two days of hearings on Judge Green's September ruling on the first triennial review. At that time, the Judge had yet to complete action on the information services prohibition. He did so this past March, permitting the Regional Bell Operating Companies to provide certain information services, so long as they did not generate any content.

Judge Greene issued this decision in part because he believed that the FCC could handle any anti-competitive problems that might arise.

The Commission now bears the heavy burden of ensuring that these problems do not occur. The FCC has tried for many years to ensure that the telephone companies do not use their monopoly position to harm competitors and ratepayers.

In adopting this Third Computer Inquiry in 1985, the Commission chose a new approach, the Commission chose a new approach. Rather than requiring the telephone companies to structurally separate their regulated and competitive activities, the Commission decided to rely on new rules for the allocation of joint costs and to require the local telephone companies to adopt an open network architecture. Both of these proposals have conceptual merit. The question is whether they can work in fact.

I am not certain we will be able to answer this question this year, much less this morning. The cost allocation rules have only been in effect for a very short time and because of the inherent problems involved in allocating joint costs of monopolies, many parties are skeptical about the success of any rules.

The Commission's rules come for even harsher comment because of the methodology chosen and the fact they only apply to interstate services. While the witnesses may wish to speak to these matters, any final judgment will have to wait for the actual evidence.

The open network architecture plans are a matter of more immediate concern. When the Commission first broached the idea of an open network architecture, it was just that, an idea, requiring much further definition.

Over the past two years, the interested parties have tried to reach agreement on how to proceed but it is clear from the controversy generated by the plans filed this past February, that we have a long way to go.

The plans filed by the Regional Bell Operating Companies demonstrate the gulf between the concept and reality of open network architecture. These local telephone companies argue that they have to fit this concept to the realities of their network and their regulatory obligations. The information service companies argue that the plans fall so far short of the objectives of open network architecture that they would do little to alleviate the opportunities for discriminatory conduct.

The Commission now has the responsibility to settle these many issues. Moreover, some of the issues raised in these plans are not susceptible to resolution by the end of this year.

Other complicating factors are the need to involve the states and the fact that the Commission has already approved certain services based on the interim requirement of comparably efficient inter-connection.

In light of these difficulties, as well as the importance of the open network architecture concept, how should the Commission rule on the plan? There is no doubt that the matters raised here are highly technical and complex. Our ability in the Congress to deal with such esoteric matters is limited obviously, but the importance of these matters is great and the stakes are very high.

If the Commission's concepts can successfully be implemented, we may well remedy a problem we have wrestled with for about 75 years. If they cannot, we will have harmed ratepayers and competitors and we will have to try again. I can assure all of you that while we may not fully grasp every minute point, we can understand the overall problems and their gravity.

And to assist us in our review of these matters, we have gathered many witnesses representing the many sides of the debate. I believe they will be able to give us a good idea of the importance of these matters, the problems and the ways they might be resolved.

And so I welcome them all here this morning on behalf of the Committee.

Our first witness is the Chief of the Common Carrier Bureau of the Federal Communications Commission, Mr. Gerald Brock.

Mr. Brock.

Senator PRESSLER. Mr. Chairman.

Senator INOUYE. Yes?

OPENING STATEMENT BY SENATOR PRESSLER

Senator PRESSLER. I would just like to make a brief opening statement.

Senator INOUYE. Fine. If I may call upon Senator Pressler.

Senator PRESSLER. Mr. Chairman, I hope that the eventual implementation of the open network architecture results in what has been promised; that is, an acceleration of the availability of information services to the average citizen. As I have said before, I want to see the information age arrive, not in just a few areas, but for all Americans, including rural Americans.

The two conditions I would put on this are that it should be done as soon as possible and at a fair price. Maybe that is too much to ask, but that also seems to be the concept behind the open network architecture.

If it works the way it is supposed to, we should see very soon after its implementation an increase in available services for many providers at competitive rates. But as frequently is the case, sometimes these more competitive rates and the services are available in the rich markets, the suburban areas, the densely populated areas, and the other parts of the country are left without these services. And there is a lot of talk about how good everything is and how many services are being provided, but there are some Americans left out.

Mr. Chairman, I thank you very much for holding this hearing and I look forward to today's testimony explaining how the open network architecture should work and I hope the witnesses will keep in mind that I am listening with a very tuned ear to not only how it will work in the big cities and the wealthy suburban markets, but how it will work out across the country in the sparsely populated areas and the smaller towns, and especially in view of some of the things that have happened under the deregulation bills of the various industries and so forth.

So I think you very much.

Senator INOUYE. Thank you very much.

I have a statement that Senator Hollings would like to have included in the record;

[The statement follows:]

OPENING STATEMENT BY THE CHAIRMAN

I want to thank the Chairman of the Subcommittee for scheduling this hearing on the Modified Final Judgement and Open Network Architecture and the upcoming hearing on the FCC's price cap proceeding. While everyone else in town is winding down, this FCC is gearing up. They are racing to adopt decisions furthering their deregulatory ideology when it is clear to everyone that this one-sided view does not serve the American public. Just as the Administration's budget moves us more and more in the wrong direction, so do these deregulatory actions of the FCC. While it will be up to the next Administration to bail us out, there are certain steps we can take now. By having these hearings, we can see how far out the Commission has gone and whether we should simply stop it from acting.

On the subject of today's hearings, I am dubious about whether the actions taken by this Commission in its Third Computer Inquiry will adequately protect ratepayers and competitors from anti-competitive harm. I am all too familiar with attempts by regulators to allocate joint costs and determine the actual costs of services. These rules have never worked because the telephone companies have incentives that go in the opposite direction and the regulators do not have the ability to catch them. I continue to challenge anyone to accurately determine the cost of each telephone service.

As for open network architecture, the Commission has to do more than rest its actions on faith. The concept has merit, but that is not enough. The Commission must make it work in fact. It is clear from the comments on the plans filed by the telephone companies that the Commission has a long ways to go and that it will take a long time to get there.

I look forward to hearing from the Commission and the other witnesses today on how to turn the idea into reality.

Senator INOUYE. Mr. Brock.

STATEMENT OF GERALD BROCK, CHIEF, COMMON CARRIER BUREAU, FEDERAL COMMUNICATIONS COMMISSION; ACCOMPANIED BY BILL MAHER, HEAD OF FEDERAL COMMUNICATIONS COMMISSION TASK FORCE ON OPEN NETWORK ARCHITECTURE

Mr. BROCK. Good morning, Mr. Chairman and members of the Subcommittee. It is a pleasure to appear before you to discuss implementation of the Federal Communications Commission's Open Network Architecture or ONA program. I am accompanied this morning by Bill Maher, the head of our ONA Task Force.

The Commission's goal in the ONA proceeding is to promote the efficient provision of "Information Age" enhanced services while preventing the Regional Bell Operating Companies and AT&T from discriminating against other enhanced service providers that rely on regulated telecommunications services.

While the Commission is facing many issues in implementing ONA, the potential rewards are great. Telephone companies should gain the opportunity to offer enhanced services efficiently, but under fair market rules for competition. Enhanced service providers should gain more flexible access to new and existing network services, enabling them to

reach new customers and develop new services. Finally, and most important, ONA should give consumers the opportunity to obtain new enhanced services, offered in a more competitive environment.

By the term "Open Network Architecture," or ONA, I am referring to one of the major regulatory requirements that the Bell Operating Companies must satisfy in order to offer unregulated enhanced services and regulated basic services in a fully integrated manner. Under the ONA regime that the Commission outlined in its Computer III proceeding, these carriers must make available unbundled basic services, known as Basic Service Elements, that enhanced service providers need for their offerings. Enhanced services include a broad range of computer applications provided through this country's telecommunications network, including information retrieval or data base services, voice messaging services, and packet switching with the protocol processing that allows communication between different types of computers and terminals.

In our Computer Inquiries, conducted over the past 22 years, the Commission has taken an evolutionary path that has promoted a deregulated, freely competitive market for enhanced services. As a result of this process, enhanced service providers are free to enter the marketplace and offer their services based on consumer demands, essentially free of regulatory constraints.

A major issue in the Computer Inquiries has been to decide the conditions under which regulated telephone companies such as the Bell Operating Companies and AT&T can provide enhanced services as well as regulated common carrier telecommunications services. Throughout this process, the Commission has sought to ensure that enhanced services be widely available to all users of the telephone network, while preventing the telephone company from discriminating against competing enhanced service providers who may rely on its regulated basic services.

The ONA plans were filed with the Commission on February 1 of this year. The Commission has received extensive comment on the plans. More than 50 parties filed initial comments and 35 parties filed replies. The comment cycle closed May 31, and the Common Carrier Bureau is currently evaluating both the plans and the comments.

We have identified a number of issues that must be resolved before the plans can be implemented. These issues include uniformity. The ONA plans vary in the names, technical characteristics, availability, deployment and tariffing of the initial basic service element. Commenters claim that such variations could hinder the development of truly nationwide enhanced services.

Unbundling. Have the Bell Operating Companies sufficiently unbundled their basic services? Have they adequately satisfied enhanced service providers' requests for basic service elements that would be useful to them?

Tariffing jurisdiction. Some plans propose to tariff virtually all basic service elements in the state jurisdiction while others propose to tariff the elements in both the federal and state jurisdictions. In which jurisdiction should the tariffing take place?

Pricing. Some Bell Operating Companies have proposed ONA tariffs with new prices for enhanced service providers only. Are such proposals unreasonably discriminatory?

Deployment and future evolution. In Computer III, the Commission required the Bell Operating Companies to provide deployment schedules and descriptions of their plans for further network evolution. Commenters have claimed that the plans are inadequate in this respect. To what degree should the companies be required to describe further their plans and processes for deploying new basic service elements?

While these issues are complex, the Commission and its staff are working to ensure that ONA promotes both efficiency and competition in the provision of enhanced services. To that end, we are carefully evaluating each ONA plan to determine what, if any, revisions are necessary for each in order to satisfy the goals of the proceeding.

The Commission has devoted substantial resources to the ONA process and the plans before us are matters of high priority. We will act on the ONA plans as swiftly as possible, while ensuring that they receive the public input and careful attention that they require.

Thank you for your attention. I would be glad to respond to any questions you might have.

[The statement and questions and answers follow:]

STATEMENT OF GERALD BROCK, CHIEF, COMMON CARRIER BUREAU, FEDERAL COMMUNICATIONS COMMISSION

Mr. Chairman and Members of the Subcommittee, it is a pleasure to appear before you to discuss implementation of the Federal Communications Commission's Open Network Architecture (ONA) program. The Commission's goal in the ONA proceeding is to promote the efficient provision of advanced, "Information Age" enhanced services while preventing the Regional Bell Operating Companies and AT&T from discriminating against other enhanced service providers that rely on regulated telecommunications services.

This is a crucial proceeding because enhanced services comprise one of the segments of our nation's telecommunications marketplace with the most potential for growth and benefits for users. ONA will determine the ground rules for such growth. While the Commission is facing many issues in implementing ONA, the potential rewards are great. Telephone companies should gain the opportunity to offer enhanced services efficiently, but under fair market rules for competition. Enhanced service providers should gain more flexible access to new and existing network services, enabling them to reach new customers and develop new services, subject, of course, to increased competition from telephone companies. Finally, and most importantly, ONA should give consumers the opportunity to obtain new enhanced services, offered in a more competitive environment.

By the term "Open Network Architecture," I am referring to one of the major regulatory requirements that the BOCs must satisfy in order to offer unregulated enhanced services and regulated basic services in a fully integrated manner. Under the ONA regime that the Commission outlined in its *Computer III* proceeding, these carriers must make available unbundled basic services, known as Basic Service Elements or BSEs, that enhanced service providers need for their offerings. By the term "enhanced services," I am referring to the regulatory label that the Commission has applied to a broad range of computer applications provided through this country's telecommunications network—including information retrieval or data base services, voice messaging services, and packet switching with the protocol processing that allows communication between different types of computers and terminals. These applications are part of the developing telecommunications-based computer services that hold great promise to benefit consumers and the nation as a whole.

ONA has been both praised and criticized as a "vision of the future." ONA is futuristic, since it applies innovative regulatory requirements to perhaps the most advanced of American technologies—the confluence of computers and communications. In a deeper sense, however, ONA is the latest example of a long-time Commission commitment to promoting United States telecommunications by increasing efficiency, through technical innovation and competition, as well as fairness, through "equal access" to the regulated network. The registration program for customer premises equipment and the open entry and equal access programs for interexchange carriers are other examples of this pro-competitive, efficiency-enhancing approach. With the filing of the ONA plans on February 1, 1988, the Commission is now in the process of turning its vision for enhanced services into reality.

The Commission has taken important steps to foster the development of enhanced services because a feature-rich telecommunications system subject to robust competition serves the public interest. In our Computer Inquiries, conducted over the past 22 years, the Commission has taken an evolutionary path that has promoted a deregulated, freely competitive market for enhanced services. As a result of this process, enhanced service providers are free to enter the marketplace and offer their services based on consumer demands, essentially free of regulatory constraints.

A major issue in the Computer Inquiries has been to decide the conditions under which regulated telephone companies like the BOCs and AT&T can provide enhanced services as well as regulated, common carrier telecommunications services. Throughout this process, the Commission has held fast to two policy goals regarding telephone company participation in unregulated markets: to prevent improper cross-subsidization or cost shifting from the unregulated activities of the telephone company to its regulated operations; and to prevent the telephone company from discriminating against competing enhanced service providers or future competitors, who may rely on its regulated basic services. In addition, the Commission has sought to ensure that enhanced services be widely available to all users of the telephone network.

In the First Computer Inquiry, which started in 1966, the Commission first attempted to define the conditions under which common carrier telephone companies could offer unregulated "data processing" services. In its *Computer II* decision of

1980, the Commission formally distinguished between "basic" common carrier services, which are subject to regulation under Title II of the Communications Act of 1934, and "enhanced" services, which are unregulated. In order to prevent the predivestiture AT&T from improperly shifting costs and discriminating against enhanced service competitors who were also customers of AT&T's basic services, the Commission decided that AT&T could offer enhanced services, but only through an unregulated subsidiary that was "fully separated" from its regulated operations. Under this structural separation regime, the Commission required AT&T's subsidiary to have, among other things, buildings, personnel, and computers that are separate from its regulated operations. It also imposed strict limitations on information flows between the two entities and joint activities like research and development. When AT&T divested itself of the BOCs pursuant to the Modified Final Judgment, the Commission applied the structural separation requirements to the BOCs as well.

Open Network Architecture is a product of the Commission's *Computer III* proceeding, which started in 1985. In *Computer III,* the Commission retained the basic and enhanced service definitions. However, it also found that the costs of structural separation—in lost innovation, inefficiency, and delay—outweighed its benefits in preventing cross-subsidization and discrimination. The Commission decided to replace the separate subsidiary rule for the enhanced service operations of the BOCs and AT&T with nonstructural safeguards, designed to address the same regulatory goals. Thus, the Commission imposed its detailed cost allocation requirements on the BOCs and AT&T in order to prevent cross subsidization. To prevent discrimination, the Commission adopted detailed rules governing BOC and AT&T use of customer proprietary network information (CPNI), requirements for early disclosure of network interface information, and quarterly nondiscrimination reporting requirements.

The Commission also adopted the ONA requirements, as an antidiscrimination measure with important pro-efficiency aspects. The Commission found in *Computer III* that the carriers could potentially offer widely available, inexpensive enhanced services to benefit residential and small business customers if they could integrate their basic and enhanced services operations. If a BOC were to offer a particular enhanced service without a separate subsidiary, it would be able to use the necessary underlying basic services on an unbundled basis. The Commission found that the enhanced service competitors of such a carrier must have the same opportunity to use these basic services—the unbundled BSEs. As importantly, it required the BOCs to meet with the enhanced service industry to determine industry needs for BSEs. The Commission required the BOCs to make BSEs available based on three criteria: the expected market demand for BSEs, their utility as perceived by enhanced service providers, and the technical and costing feasibility of unbundling. Prior to filing their ONA plans, the BOCs met extensively with enhanced service providers and others to discuss these needs.

The Commission further requires the BOCs to offer these BSEs on an equal basis to themselves and their competitors. This "equal access" requirement is known as Comparably Efficient Interconnection (CEI). Under the CEI requirement, the BOCs must provide equality in such areas as technical specifications; the time periods needed for installation, maintenance, and repair of BSEs; opportunities to test new service configurations; and availability of BSEs to end users. Similarly, the BOCs' enhanced service operations must take BSEs at the same tariffed rates as other enhanced service providers.

The ONA requirements also include specific pricing guidelines for the BSEs. However, the Commission recognized that some BSEs would be basic services tariffed at the state level, and has acknowledged the states' authority over the rates, terms, and conditions of intrastate basic service offerings used in ONA. The Commission, of course, does not set rates for BSEs that are in the states' jurisdiction.

In discussing ONA, I have focused on the requirements as they apply to the BOCs. The ONA requirements for AT&T differ from those for the BOCs because, unlike the BOCs, AT&T is an interexchange carrier subject to competition. Thus, the Commission does not require AT&T to perform a general unbundling of BSEs. AT&T's plan contains, among other things, a description of how it will support the transmission of the signaling information associated with BOC BSEs used between LATAs or between BOC service areas.

To implement the ONA requirements, the Commission required the BOCs and AT&T to file ONA plans with the Commission on February 1, 1988. The Commission required each BOC plan to describe an initial set of BSEs, the BOC's plans for deploying those BSEs, and its plans for the long-term evolution of ONA, since the Commission has stated that implementation of the initial set of BSEs is only a first step in ONA development. The ONA plans also must describe carrier compliance

with the other nonstructural safeguards of *Computer III*, governing the use of CPNI, network information disclosure, and nondiscrimination reporting.

Until the Commission approves the ONA plans and the BOCs implement their initial BSEs, the structural separation requirement of *Computer II* will remain in effect. In the interim, the BOCs may file so-called "CEI plans" in order to offer individual enhanced services on an unseparated basis. In these interim CEI plans, the BOCs must show that they satisfy the "equal access" and pricing requirements of ONA for the specific enhanced services they want to offer.

To date, the Commission has approved two BOC CEI plans—a Pacific Telesis plan for voice messaging services, and a Bell Atlantic plan for a message storage service. The BOCs recently filed ten additional CEI Plans and two requests for temporary waiver of the CEI rules that the Commission is now evaluating. These CEI plans are generally for the two types of "information services" that the MFJ Court permitted the BOCs to offer in its decision of March 7, 1988: electronic gateway services and voice messaging services.

The Commission has received extensive comment on the ONA plans that the BOCs and AT&T filed on February 1. More than fifty parties filed initial comments and thirty five parties filed replies. The comment cycle closed on May 31, 1988, and the Common Carrier Bureau is presently evaluating both the plans and the comments. The BOCs' ONA plans share a common organization and use a "common ONA model" to describe their proposals for implementing ONA. Moreover, the initial sets of BSEs proposed in the plans are based on existing network capabilities, but do unbundle certain features that now are only offered as part of a larger service package like Centrex. However, the plans differ in a number of important areas, such as the technical implementations of BSEs, the plans' treatment of ONA deployment and future evolution, and their proposals for tariffing and pricing BSEs.

The comments we have received have been highly critical of the BOC's ONA plans. Some commenters call for the Commission to reject the plans in their entirety. Others urge the Commission to require the BOCs to revise their ONA plans substantially. Still others call for the Commission to permit the BOCs to implement the plans on an interim basis while modifying them to correct certain defects. While some opponents urge the Commission to refuse to process any CEI plans until the BOCs submit adequate ONA plans, others argue that the Commission should continue with CEI while the BOCs revise their ONA plans.

Based on our analysis of the BOCs' plans and the comments, we have identified a number of issues that we believe must be resolved before the structural separation requirement can be removed. Some, but not all, of these issues include:

Uniformity: The ONA plans vary somewhat in the names, technical characteristics, availability, deployment, and tariffing of the initial BSEs. Commenters claim that such variations could hinder the development of truly nationwide enhanced services. For example, different BOC plans propose several different technical implementations of a useful BSE like Calling Number Identification. How should the plans be made more uniform, so that an enhanced service provider can more easily use such BSEs on a nationwide or regional basis? How should the states participate in this aspect of the ONA process?

Unbundling: Have the BOCs sufficiently unbundled their basic services? Have the BOCs adequately satisfied enhanced service providers' requests for BSEs that would be useful to them? While the BOCs provide some economic and technical justifications for the unbundling they have performed, some enhanced service providers claim that the plans did not address the detailed lists of desirable service requests that they submitted to the BOCs.

Tariffing: Some plans propose to tariff virtually all BSEs in the state jurisdiction, while others propose to tariff BSEs in both the federal and state jurisdictions. In which jurisdictions should the BOCs tariff their BSEs? How do the proposed ONA tariffs correspond to the Commission's existing tariff structure? The Commission, of course, is sensitive to the jurisdiction of the states in this area.

Pricing and Terms and Conditions—Some BOCs have proposed new prices and terms and conditions for some BSEs. For example, BOCs have proposed ONA tariffs with new prices for enhanced service providers only. Are much proposals unreasonably discriminatory?

Deployment and Future Evolution: In *Computer III*, the Commission required the BOCs to provide deployment schedules and descriptions of their plans for further network evolution in their ONA plans. Commenters have claimed that the plans are inadequate in this respect. To what degree should the BOCs be required to describe further their plans and processes for deploying new BSEs beyond the proposed initial BSEs? Resolution of this issue is crucial to the future development of ONA and the enhanced service industry.

While these issues are complex, the Commission and its staff are working to ensurse that ONA promotes both efficiency and competition in the provision of enhanced services. To that end, we are carefully evaluating each ONA plan to determine what, if any, revisions are necessary for each in order to satisfy ONA's goals. The Commission has devoted substantial resources to the ONA process, and the CEI and ONA plans before us are matters of high priority. Because the CEI plans are specifically focused on particular enhanced services, in contrast to the more global, long-term ONA plans, the Bureau will review the CEI plans carefully to determine whether it can approve these plans prior to a general implementation of ONA. This would permit the BOCs to offer these services to the American pulbic in a nondiscriminatory manner as the Commission evaluates the ONA plans.

We will act on the ONA plans as swiftly as possible, while ensuring that they receive the public input and the careful attention of the staff that they require. After fully analyzing the plans, the Commission will decide whether to accept or reject them. Alternatively, it could require further revisions to, and public comment on, the plans prior to removing the structural separation requirements for the BOCs.

In summary, ONA is an evolutionary, not revolutionary, process, and we are well into that process. The Commission is working to see that ONA results in both increased availability of enhanced services, like computer gateways and voice messaging, for ordinary telecommunications users, as well as increased competition in this area as the BOCs and AT&T enter these markets. We, of course, welcome the March 7, 1988, decision of the MFJ Court to permit the BOCs to offer certain types of information services. The Commission's position continues to be that the MFJ's line of business restriction on BOC provision of information services should be removed. ONA, CEI, and the Commission's other nonstructural safeguards are more than adequate to ensure that the interests of consumers, the enhanced service industry, and the nation will be served.

Thank you for your attention. I would be glad to respond to any questions you might have.

QUESTIONS OF THE CHAIRMAN AND THE ANSWERS

Question 1. The ONA policy is based upon the unbundling of key network elements; yet, all the plans rely upon bundled basic service arrangements. Do these arrangements undercut the ONA policy?

Answer. In the *Computer III* proceeding, the Commission required the BOCs to provide unbundled basic services (known as Basic Service Elements or BSEs) in order to give competing enhanced service providers an opportunity to design enhanced offerings that use basic services in a flexible and economical manner. The Commission required each BOC to present in its ONA plan an initial set of key BSEs that can be used in a wide variety of enhanced services. However, the Commission noted that inefficiencies could occur from unnecessarily unbundled or splintered basic services, and accordingly required the BOCs to make available the initial set of BSEs based on four criteria: their expected market demand, their utility as perceived by enhanced service competitors, and the technical and costing feasibility of such unbundling.

The BOCs' ONA plans, filed on February 1, 1988, present a "common ONA model" that most of the BOCs use in describing their initial sets of ONA offerings. This model has several components, each of which performs a different function in providing basic service to an enhanced service provider. One important component of the model is the Basic Serving Arrangement or BSA, which the BOCs define as the underlying interconnection of an enhanced service provider to and through the BOC network. In the common ONA model, the BSA is treated as the fundamental ONA connection to the network. The model also defines a BSE as an optional network capability that is associated with one or more BSAs. Some commenters on the ONA plans contend that because the elements labeled as BSEs in the common ONA model are optional features associated with BSAs, the BSAs and BSEs are improperly bundled together. Such commenters argue, among other things, that enhanced service providers should be able to provide their own BSAs while still being able to obtain BSEs from the BOCs. Others contend that BSEs should be available with more different types of BSAs. Several BOCs reply that their proposed ONA services adequately meet the Commission's four criteria for unbundling, and note that there may be negative effects on intrastate telephone service if enhanced service providers are permitted to provide their own BSAs.

The Commission will closely examine these issues by evaluating the BOCs' compliance with the four criteria for unbundling it has adopted in light of the ONA

record. It also will examine the implications of the BOCs' use of the common ONA model in their plans regarding its unbundling policies.

Question 2. Some Regional Operating Companies have signed agreements with certain enhanced service providers concerning Customer Proprietary Network Information (CPNI). These agreements give these providers greater protection for their customers' information than that required by the Commission. Do you believe the Commission should now revisit this matter?

Answer. To the Commission's knowledge, no BOC has signed agreements with enhanced service providers to give such providers special treatment for their customers' CPNI. Thus, at this time, the Commission has no basis to revisit its CPNI rules for enhanced services, which it developed in the *Phase I Order* and *Phase II Order* in *Computer III* and refined in the *Phase II Reconsideration Order*, after extensive public comment. However, the Commission is examining the BOCs' compliance with its CPNI rules as part of the ONA proceeding.

The *Phase II Reconsideration Order* noted that when an enhanced service provider requests that access to its CPNI be restricted, in certain circumstances their may be an ambiguity over whether a particular item of CPNI should be attributed to the provider (and thus should be restricted) or to a customer of the provider. The Commission required the BOCs to amend their ONA plans to address such ambiguities and to describe the CPNI of the various types of enhanced service providers that they will restrict if requested to do so by those providers. The BOCs filed their ONA plan amendments on March 10, 1988, and the Commission is scrutinizing those amendments.

Question 3. In certain ONA plans, the prices offered for network elements are based on access charge rates. Is this a backdoor way of instituting access charges for enhanced service providers?

Answer. No. Nothing in the Commission's ONA program alters the access charge exemption for enhanced service providers. This exemption permits enhanced service providers to take local business lines or other intrastate service for interstate access, rather than federally tariffed access service.

Several BOCs have filed ONA plans that propose to require enhanced service providers to take service from special state tariffs, with rates and restrictions different from those for existing intrastate service. Some of these proposed state tariffs are based on either state or federal access tariffs. However, most, but not all, of the BOCs propose to permit enhanced service providers to continue to take local business lines and existing services under existing state tariffing arrangements.

The Commission is evaluating the effects of the BOCs' proposals on the ONA process in light of the federal exemption for enhanced service providers, the goal of making new network services available to promote the growth of the enhanced service industry, and the Commission's somewhat limited jurisdiction over intrastate services.

Question 4. None of the ONA plans include prices for the BSEs. Do you believe such information is necessary prior to the approval of a plan?

Answer. Pricing information is one type of information that the Commission needs to evaluate properly the extent to which the BOCs' proposed BSEs satisfy the ONA goals of preventing discrimination by the BOCs against enhanced service competitors while increasing the efficient use of the network in the provision of enhanced services. Thus, a plan must contain adequate pricing information before it can be approved. However, the Commission recognizes that since the actual tariffs for many new BSEs have not yet been filed either with the Commission or with the appropriate state commission, any illustrative prices for BSEs are exemplary only and could change when tariffs are filed. The methods that the BOCs will use in pricing their BSEs are quite important in evaluating the ONA plans.

All of the ONA plans describe (in varying degrees of detail) the methodologies that the BOCs propose to follow in pricing their BSEs. Some of the BOC ONA plans include sample ONA tariffs with illustrative prices. Others, however, have filed little or no such information.

The Commission will examine the pricing information in each plan to determine whether it adequately satisfies ONA's requirements and goals. If such information is inadequate, the Commission will require the BOC to supplement the information in its plan.

Question 5. The MFJ imposes certain requirements on the prices to be charged by the Regional Operating Companies for the transport of traffic that crosses their local operating areas. Will these requirements limit the Commission's ability to call for cost based transport rates?

Answer. The Commission's ONA pricing rules permit, but do not require, distance-sensitive cost-based rates for transmission facilities. The Commission's access

charge rules currently provide for both dedicated (flat-rated) and common (usage-based) transport. The MFJ requires that "charges for delivery or receipt of traffic of the same type between end offices and facilities of interexchange carriers within an exchange area . . . shall be equal, per unit of traffic delivered or received, for all interexchange carriers." United States v. American Telephone and Telegraph Company, 552 F.Supp. 131, 233-34 (1982), *affd sub nom.* Maryland v. United States, 460 U.S. 1001 (1983). The MFJ provision is a non-cost-based pricing rule designed to assist the smaller interexchange carriers, which, after divestiture, were not in a position to take advantage of dedicated transport to the same extent as AT&T. The Commission has waived its dedicated transport rules to permit BOCs to comply with the MFJ requirement.

Interpretation of the MFJ is, of course, a matter for the Department of Justice and the MFJ court. However, it does appear that the Commission would have difficulty establishing cost-based pricing requirements in, for example, federal ONA tariffs that would permit the BOCs both to comply with the MFJ and to adhere to the policies of nondiscrimination established in the Commission's access charge proceeding and in ONA. The requirement of the MFJ, by its terms, appears to apply only to interexchange carriers, and not to enhanced service providers, although recent court decisions raise some questions as to whether this requirement applies more broadly. If the requirement only applies to interexchange carriers, it theoretically may be possible to require carriers to offer dedicated transport to enhanced service providers but not to interexchange carriers and avoid a conflict with the terms of the MFJ. Such an arrangement, however, would conflict with the general nondiscrimination requirements of our access charge policy, as well as the ONA requirements that federal ONA tariffs not contain any customer or use restrictions. On the other hand, this issue appears to be temporary since the MFJ requirement expires September 1, 1991.

Question 6. Even if the Commission acts on the ONA plans this year, many issues still need to be resolved. What options—particularly the procedure—are being considered by the Commission to address these unresolved matters?

Answer. Because the ONA issues are complex, the Commission is carefully evaluating each ONA plan and the record to determine what revisions are necessary for each in order to ensure that ONA promotes efficiency and competition in the provision of enhanced services. After fully analyzing the plans, the Commission will decide whether to accept or reject them. Alternatively, it could require the BOCs to file revisions to their plans and request public comment on the revisions prior to removing the structural separation requirements for the BOCs. The Commission is presently considering which of these courses it should follow.

A number of parties suggest that the Commission use input from an outside forum in resolving certain ONA issues and the Commission is evaluating these suggestions. Many of the issues suggested for this treatment involve nationwide uniformity of various aspects of ONA, based on parties' concerns that the BOCs' ONA plans contain differences in nonemclature, technical characteristics, availability and deployment of BSAs and BSEs, and tariff and pricing proposals that may limit the usefulness of their offerings to enhance service providers. Resolution of such issues may require close cooperation and continuing discussions between the various groups involved with ONA.

To date, there have been two primary suggestions regarding the proposed forum to address uniformity issues. The first is a private forum, the Information Industry Liaison Committee, (IILC), sponsored by the Exchange Carriers Standards Association. IILC, whose members include BOCs, enhanced service providers, end users, equipment manufacturers, independent local exchange carriers, and interexchange carriers, was formed to address ONA uniformity issues, among other things, and has already started detailed work on some such issues. Other parties urge the formation of another "neutral inter-industry entity" to address uniformity concerns.

The Commission is carefully evaluating these, and other, procedural alternatives, particulary, with respect to the role of the states in the ONA process. The Commission will, of course, retain final authority over enforcing its ONA policies and requirements.

Questions of Senator Danforth and the Answers

Question 1. Why is Open Network Architecture (ONA) important?

Answer. The Commission views ONA as a procompetitive policy that is designed to promote the efficient provision of advanced, "Information Age" enhanced services while preventing the Bell Operating Companies (BOCs) and AT&T from discriminat-

ing against other enhanced service providers that rely on regulated telecommunication services. ONA is designed to bring about increased availability of enhanced services, like computer gateways and voice messaging, for ordinary telecommunications users, as well as increased competition in this area as the BOCs and AT&T enter these markets.

Because ONA requires the BOCs to provide unbundled basic services on an "equal access" basis to their enhanced service competitors, these competitors will have increased opportunities to use the BOCs' regulated telephone networks in providing innovative services to a broad spectrum of consumers. Since the BOCs, as well as their competitors, will be able to use their networks without the detrimental effects of the separate subsidiary requirement, fair competition in the enhanced services market should increase.

Question 2. What is the rationale for changing from the regulatory requirement of separate subsidiaries to non-structural safeguards such as ONA?

Answer. The Commission decided in *Computer III* to replace the separate subsidiary requirement for the enhanced service operations of AT&T and the BOCs with nonstructural safeguards. It found that the separate subsidiary rules preclude the BOCs and AT&T from offering certain enhanced services that could be efficiently integrated or collocated with the carriers' basic services, but that could not be offered on a cost-effective basis otherwise. The Commission found that structural separation imposes direct costs on AT&T, the BOCs, and, ultimately, the public from the duplication of facilities and personnel, limitations on joint marketing, and the inability to take advantage of economies of scope.

The Commission also found that its nonstructural safeguards, which include the cost allocation rules of the *Joint Cost* proceeding as well as ONA, can perform as well as the separate subsidiary requirement in controlling the possibility of discrimination and improper cost shifting by the BOCs and AT&T. Finally, the Commission found that since the adoption of the separate subsidiary rules, rapid and continuing changes in the telecommunications environment, in combination with continuing political and regulatory pressures at the state level to minimize local exchange rates, limit the carriers' ability to shift costs improperly from enhanced services. Such changes include AT&T's divestiture of the BOCs, the increased availability of opportunities, for bypass of the local exchange, and a substantial increase in competition in many specific services. The Commission's nonstructural safeguards are designed specifically to control any potential for such cost shifting and discrimination by the carriers.

Question 3. Is it important to implement ONA now?

Answer. Because of the importance of a robust and innovative enhanced service industry to the national economy and to consumers, it is necessary to implement as soon as possible an ONA regime that meets the Commission's efficiency and procompetitive goals. Because ONA is an evolutionary process for increasing the usefulness of the BOCs' network to enhanced service providers, the sooner that the industry can properly start that process, the better. Thus, the Commission will act on the ONA plans as swiftly as possible. However, it is also important to ensure that the plans receive the public input and careful attention of the Commission's staff that they require. As Mr. Brock mentioned in his testimony, the Commission has identified a number of significant issues that must be resolved before the ONA plans can be approved and the structural separation requirement can be removed.

Question 4. How will customers in rural areas benefit from ONA?

Answer. To the extent that ONA promotes the growth of enhanced services on a nationwide basis, ONA will directly benefit rural customers by making new type of enhanced services more easily available to them. For example, growth in the number and types of electronic databases accessible through the telephone network could greatly benefit rural users who could receive information from distant databases in a convenient way. Similarly, entry of the BOCs into new enhanced service markets, such as network-based voice messaging and electronic mail, could result in increased availability of such services to rural customers.

Under the ONA requirements, the BOCs must make unbundled network capabilities (known as Basic Service Elements or BSEs) available to enhanced service providers. While the BOCs generally propose to offer BSEs in urban markets first, most of the ONA plans also propose some initial deployment of BSEs in rural areas. How rapidly the BOCs continue to make those BSEs available in rural areas will depend in large part on market demand, since many rural locations have newly installed computerized switches that will support BSEs if there is sufficient demand for them. It is important to note, however, that consumers in rural areas will be able to access many enhanced services through the telecommunications network without using BSEs.

At this time, the Commission is not applying ONA requirements to the independent telephone companies, which also serve many rural areas. Because the independent companies were not subject to the separate subsidiary rules of *Computer III*, they have been free since 1980 to offer basic and enhanced services on an integrated basis, subject to cost allocation and general nondiscrimination requirements. While some parties in *Computer III* suggested that ONA requirements be applied to the independent companies, the Commission found that none of the commenters had asserted that these companies had been engaging in discriminatory conduct against competitive enhanced service providers, and that no complaints had been filed against any independent company regarding its provision of an enhanced service. While the Commission found that it was unnecessary to apply ONA to the independent companies, it held open the possibility of revisiting this issue after ONA has been implemented by the BOCs. In the meantime, however, the ONA requirements should have some benefits for subscribers in areas served by the independents. Rural customers of the independent companies, like those of the BOCs, should be able to obtain access to a greater array of enhanced service providers. Moreover, because the BOCs are important customers of switch manufacturers, requests by the BOCs to those manufacturers for ONA-compatible features will have an important impact on the switches being produced and sold to all telephone companies, including the independent companies, who will be able to offer the BSEs provided in those switches.

Question 5. What are the advantages and disadvantages of uniform ONA plans?

Answer. The Commission is closely examining uniformity issues in the ONA plans. It is a priority at the Commission to establish an ONA regime that promotes the development of the enhanced service industry on a national basis. The advantages of uniformity are ease of comprehension, technical compatibility, deployment for enhanced service providers seeking to serve national markets. These advantages are particularly important in technical and operational areas, since enhanced service providers may wish to provide services that work in a uniform way throughout a region or the nation.

Uniformity has disadvantages in some areas, stemming from the fact that consumers' needs and market conditions vary significantly across the country. For example, at a given time there may be sufficient demand for a particular service in one area, but insufficient demand in other areas to justify introduction of the service in economic terms. Moreover, different local conditions may justify different prices for similar services in different areas. In addition, diversity among ONA plans may promote the development of innovative network capabilities by various BOCs. An excessive emphasis on uniformity could tend to discourage such initiatives by driving the BOCs to adopt a lowest-common-denominator approach to ONA. In examining the plans, the Commission is seeking to balance the benefits of uniformity and diversity among them.

Question 6. What has been, and what will be, the effect of Judge Greene's decision in March to allow the BOCs to provide transmission for information services, voice storage and retrieval, and electronic mail?

Answer. While the Commission welcomes the MFJ Court's March 7, 1988, decision, competition through markets, the Commission's position continues to be that the MFJ's line of business restrictions on BOC provision of information services should be removed in order to promote development of information services. ONA, and the Commission's other nonstructural safeguards are more than adequate to ensure that the interests of consumers, the enhanced service industry, and the nation will be served.

Since the MFJ Court's March 7, 1988, decision, the BOCs have filed eight service-specific Comparably Efficient Interconnection (CEI) plans with the Commission for the provision of electronic gateway, voice messaging, and electronic messaging services. These generally are the services that the MFJ Court permitted the BOCs to offer. The Commission will review these CEI plans carefully to determine whether it can approve them prior to a general implementation of ONA. This would permit the BOCs to offer these services in a nondiscriminatory manner as the Commission evaluates the ONA plans.

Senator INOUYE. When will you make your decision?

Mr. BROCK. Senator, our current schedule calls for an initial Commission Order toward the end of this calendar year. That will not necessarily be a final resolution of all the issues, but will clarify what things can be accepted, what things are unacceptable and what places the companies need further work.

Senator INOUYE. There is an important problem before us. Since all of us represent states, state regulators play an important role in our decisionmaking. What role will the state regulators play in the ONA process?

Mr. BROCK. At present, 29 different states have filed comments in the ONA process. The jurisdictional issues that you refer to are among the most complex and difficult in bringing this process to a conclusion.

Essentially we have two different positions that have been expressed in the comments. The states in general have asked for greater state authority and separate tariffing in the individual jurisdictions. The enhanced service providers have generally asked for more national uniformity and a greater federal role or even federal preemption in tjis area. We are working with the states and trying to comprise a position that allows the process to go forward on a reasonably uniform basis while preserving the states' rights for their individual jurisdictions.

Senator INOUYE. If you find that the ONA is being, quote "frustrated" by state regulators, is federal preemption one of the possibilities?

Mr. BROCK. According to the Communications Act, we do have the legal right to preempt when there is an overriding federal interest that cannot be accommodated through the joint process. We use that right very sparingly, especially in recent years. Chairman Patrick, in particular, is very committed to a strong view of individual state rights, and we would be most reluctant to preempt.

Senator INOUYE. The Commission has often stated that the telephone companies have incentives to discriminate against competitors and that the ONA rules are designed to deal with these incentives. Obviously, these same incentives extend to filing of the ONA plans and their compliance with the rules. How are you going to deal with these incentives? For example, will the Commission delve into the reasons why certain BSEs were rejected?

Mr. BROCK. We are pursuing that question in the comment process. Several commenters have expressed the concern that BSEs they requested were not implemented. However, our primary guard against the incentives that you refer to is the fact that the Bell Operating Companies may not use any BSE they have not put into their plan and made available to the other competitors. Consequently, if they put a limited set into their plans, their own enhanced services are very limited in what can be done.

Senator INOUYE. Some of the Regional Operating Companies have permitted non-affiliated companies to co-locate their equipment with that of the telephone company. In light of this, will the Commission reconsider its decision on requiring such co-location?

Mr. BROCK. We have considered the co-location issue rather extensively in the past and the Commission concluded that it was not feasible to make a regulatory requirement for co-location. There is no current proceeding before us to reconsider or further consider that issue, though it could well arise in the future.

Senator INOUYE. In adopting the requirement of separate subsidiaries, the Commission applied it to the offering of all enhanced services. Does the Commission's ONA requirements apply as well to all enhanced services, both interstate and intrastate, and if so, will the Commission preempt state actions that conflict with the ONA policies?

Mr. BROCK. Yes. We have defined the enhanced services as an area under which preemption action was taken previously and we are not currently reconsidering that decision.

Senator INOUYE. Mr. Brock, I have several other questions. They are very complicated and they were prepared by the staff, and even if I can read the questions, I must confess to you that it does not make much sense to me.

So if I may, I would like to submit it to you, and you and the staff can have discussions.

Mr. BROCK. I would greatly appreciate that procedure, Mr. Chairman.

Senator INOUYE. I hate to carry on a discussion not knowing what I am talking about.

So Mr. Brock, I thank you very much for your help. I am certain some of the answers to the questions must have perked up some interest in the panel that will follow you, those coming from the various states. So thank you very much, sir.

Mr. BROCK. Thank you, Mr. Chairman.

Senator INOUYE. Our next witness is the Assistant Secretary for Communications and Information of the Department of Commerce, Mr. Alfred Sikes.

STATEMENT OF ALFRED SIKES, ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION, DEPARTMENT OF COMMERCE; ACCOMPANIED BY RICK FIRESTONE, CHIEF COUNSEL, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Mr. SIKES. Thank you, Mr. Chairman.

I would like at the outset to go a bit beyond the normal congratulations for holding a hearing. I believe this is a very important matter and one that I think is probably easy to defer and so I really do appreciate your providing this forum for the discussion of the issues surrounding open network architecture.

I have with me today Rick Firestone, the Chief Counsel of the National Telecommunications and Information Administration.

I have submitted more extensive testimony for the record and would like to now abbreviate my testimony for the record.

Senator INOUYE. Your full statement and the full statements of all witnesses will be made part of the record.

Mr. SIKES. The world is at a point where information is often as important as raw materials, labor, transportation and other key elements in economic progress. We are also at a point where advanced communications and information tools have created, and promise to create, dramatic changes in education, health care delivery and other important services. At this point of opportunity, we are also faced with a major challenge.

In the United States we prefer competitively-delivered services, a fact underscored in the breakup of AT&T. At the same time, we have $160 billion invested in the public switched network and want those facilities to be used to our nation's advantage. And we want the owners of those facilities, the local exchange carriers, to be able to apply their expertise. The questions then are: how can we let the local exchange carrier provide advanced information services in the most cost-efficient way without monopolizing the market for those services, and how can we create an environment which will allow our country's innovators to offer advanced information services using network capabilities. ONA is a critically important part of affirmatively resolving those two questions.

We agree that non-structural safeguards can work. For years, we have pointed out that there are workable safeguards far less intrusive than costly separate subsidiary requirements that can work to protect competition. Safeguards include better cost accounting, fuller disclosure of network information, and the unbundling of the communications building blocks which help make up information service offerings.

Nevertheless, our assessment of the situation indicates that there are going to have to be some fairly significant changes in the current procedures if ONA is to help us deliver on the promises of communications technology.

But let me digress a minute in an effort to describe an analogy to ONA that all of us might understand. Today we, residential users, as end users can buy about as much or as little as we want from the telephone company. We can buy dial tone without buying a phone: we can buy call forwarding without buying speed dialing. In short, regulation and technology have changed so that we can order a la carte when not so many years ago, we could only order a plate lunch.

Enhanced service providers are just another type of end user. An electronic mail provider, for example, might want to buy called, calling number identification, nationwide, single-number service and abbreviated dialing. He might then use those elements with equipment he owns to sell electronic mail services. And the exciting thing is that with fair and reasonable access to the network capabilities, today's innovators will come up with innovative services that we cannot now imagine.

But now let me get back to what we have asked the FCC to do. NTIA has stressed that ONA is an evolutionary process. We do not want to develop a process where the costs of implementation outweigh public benefits.

Second, we put forward a list of nine general principles that we think should govern the FCC's ONA program. Specifically, we stressed the need for standard terminology and greater technical uniformity. We looked at it from the standpoint of a company trying to offer a new information service on a broad regional or nationwide basis, and we were concerned about the practical operating problems that company might face if each local phone company took a substantially different approach.

We also looked at the initial situation from the individual customer standpoint. If you set up a system which compounds the differences that already exist in the U.S. telephone industry, you risk handicapping competition and Balkanizing the American phone system.

But the centerpiece of our submission to the FCC was a recommendation that it rely upon a balanced inter-industry group to tackle the issues and controversies which are now present. We would like to minimize the intrusion of the government into the business affairs of private companies and believe such a committee can help do that.

Currently you have two industry groups involved: enhanced service providers and Bell companies. There already is an inter-industry group and that, of course, is a step in the right direction. But the current group is affiliated with the Exchange Carrier Standards Association and some information service providers regard that as simply a telephone industry committee.

All the affected industry groups should get together. Since the FCC is ultimately responsible, it should participate. A number of companies, both carriers and enhanced service providers, have done some very farsighted work. I think their leadership understands that ONA is a critical feature in providing these advanced services.

They understand that for telephone companies ONA will mean more communications traffic and customers. For enhanced serviced providers, ONA will mean greater access to the communications facilities they need to construct their offerings. For the customer, ONA means greater access to new services.

Let me conclude, Mr. Chairman, with some observations about the importance of this overall issue. What we are talking about is electronic tools and the terms and conditions under which those tools are going to be made available to American business and to the public. In these days, when U.S. industry is being more and more challenged at home and abroad, it is especially important that we take steps to expand the ability of U.S. business to capitalize on these electronic tools and thus increase our productivity and competitiveness.

We are also talking about ensuring that the ordinary residential or small business telephone subscriber has access to the latest technology. Information services have the potential to make a significant and a direct contribution to both the nation and to the consumers' welfare and we believe this is an important step in the right direction.

Thank you.

Senator INOUYE. Thank you very much, Mr. Sikes. As you may have noted, there's a vote pending at this moment, so we will take a short recess.

[The statement and questions and answers follow:]

STATEMENT OF ALFRED C. SIKES ASSISTANT SECRETARY FOR COMMUNICATIONS AND INFORMATION NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the Subcommittee:

Thank you for this opportunity to review NTIA's recommendations regarding the FCC's current "Open Network Architecture," or "ONA" program.

SUPPORT FOR THE FCC OBJECTIVES

Let me start by reiterating our general support for the FCC's objectives.

We agree with the FCC—that "non-structural" safeguards can work. NTIA's 1985 Domestic Policy report documented the adverse effects of the FCC's earlier requirement—that all non-basic communications services be marketed by AT&T and the Bell companies only through separate subsidiaries.

It is also important to have cost-effective procedures which prevent phone companies from unfairly discriminating against competitors in providing new information services.

What the FCC is proposing reflects longstanding NTIA policy recommendations. For years, we have pointed out that there are workable safeguards—less intrusive than costly separate subsidiary requirements—that can work to protect competition. Such safeguards include better cost accounting, fuller disclosure of network information, and the "unbundling" of the communications "building blocks" which help make up information service offerings.

The Government should be cautious about getting into the business of directing specific technical approaches and solutions.

Nevertheless, our assessment of the situation indicates that there are going to have to be some fairly significant changes in the current procedures, if "Open Network Architecture" (ONA) is to work the way it should.

CHANGES ARE REQUIRED

Last May, NTIA filed extensive comments with the FCC. We made a number of recommendations.

First, we stressed that ONA is an evolutionary process. Premature regulatory directives could thus result in costs which overwhelm benefits.

Second, we put forward a list of nine general principles that we think should govern the FCC's ONA program. Specifically, we stressed the need for (a) standard terminology and (b) greater technical uniformity.

When the Bell companies submitted their original ONA plans in February 1988, they differed considerably. Each proposed different numbers of "basic service elements"—the network "building blocks" for information services—and even gave them different names.

We looked at it from the standpoint of a company trying to offer a new, communications-computer or "information" service on a broad regional, or perhaps national scale. And, we were concerned about the practical, operating problems that companies might face, if each local phone company took a substantially different approach.

We also looked at the initial situation from the customer's standpoint. If you set up a system which compounds the differences which already exist in the U.S. telephone industry, you risk handicapping competition and Balkanizing the system.

NEED TO FOSTER COMPETITION AND PARITY OF CHOICE

The initial ONA plans did not seem consistent with two of our fundamental policy goals—namely, the need for more effective competition, and for nationwide availability of our information service resources.

We didn't recommend absolute geographic uniformity. That could greatly increase costs and slow the whole process down. By the same token, we don't want the kind of situation evolving where customers in New York City, for instance, would have many choices, while those in Lincoln, Nebraska would have few, or none.

NEED FOR A "NEUTRAL CONVENER"

But the centerpiece of our submission to the FCC was our recommendation that it rely upon a balanced, inter-industry group to tackle the issues and controversies which are now present, and will continue to arise, as we move forward with ONA.

Currently, you basically have two industry groups involved in this complicated process. On the one hand, there are the "enhanced service providers," or "ESPs." These firms range from large, nationwide information service companies—such as Dun & Bradstreet and US Sprint's Telenet subsidiary—to smaller, entrepreneurial companies. On the other hand, you have the Bell companies. And, they differ in their circumstances, commercial plans, and policies, too.

There already is an inter-industry group, called the "Information Industry Liaison Committee." This is a step in the right direction. But the committee is affiliated with the Exchange Carriers Standards Association. Correctly or not, some information service providers regard it as just a telephone industry committee.

DEVELOPING A WORKABLE CONSENSUS

We did not specify exactly how to organize a more balanced industry committee. What typically happens in developing communications standards is that all the affected industry groups get together. They agree on what kind of committee should be set up, and its terms of reference. We think that approach can work here.

GOVERNMENT OBSERVERS

We also believe that, since the FCC is ultimately responsible, it should participate as an observer in the new committee's meetings. Again, in the standards development work which NTIA has done, we have found that industry and Government representatives frequently reach agreement more quickly. The debate tends to be less strident, and the level of cooperation usually is higher. Protracted and debilitating adversarial proceedings are minimized. All parties are given a full and fair chance to explain their views. And, most importantly, the Government officials don't have to dictate solutions.

NO IMPOSED SOLUTIONS

We regard "Open Network Architecture" as an evolutionary process. We also believe it is an approach which holds great promise for the industry groups involved and, as importantly, for the general public.

For telephone companies, ONA should mean more communications traffic and customers. It should mean more intensive use of some $170 billion in existing local Bell company plant and equipment. It should also mean a more competitive information services market—competition among service providers which should stimulate demand and meet customer needs.

For enhanced service providers, ONA also should mean greater access to the communications facilities they need to market their offerings. It should mean more flexibility to piece together communications and computer resources, and to provide new services more efficiently to the customer.

For the customer, ONA means greater access to new services. That hasn't been a problem for large corporations. But for the small to medium sized companies, and for ordinary residential customers, promises too often have proven greater than reality.

Now, ONA isn't the only way to approach the competitive provision of information services by both common carriers and ESPs. But NTIA believes it is an important component of that solution—and, one which is going to entail not only technical and marketing changes, but also new investment, risk taking, and a willingness to work to develop new markets for the long haul.

IMPORTANT TO THE COUNTRY

Let me conclude, Mr. Chairman, with some observations about how important this overall issue is to the American public and the future strength of our economy.

ONA is an intensely complicated proposition. You almost have to have a degree in electrical engineering to fully appreciate all the technical nuances. Simply penetrating the jargon and acronyms constitutes a major undertaking.

ASSET EFFICIENCY

But what we are talking about here is important, electronic tools—and the terms and conditions under which those tools are going to be available to American business and the public.

It is important that we make maximum use of the substantial capital we have invested in both the communications and computer sectors. The net current assets of just the regulated communications companies total some $250 billion—a quarter of a trillion dollars. The Bell companies' alone amount to about $170 billion. If you add the public's investment in telephones, switchboards, and the like, our national stake here approaches $350 billion.

Additionally, the value of the installed base of computer equipment in the United States may be twice that—half a trillion dollars, according to NTIA estimates.

Taken together, communications and computers amount to 15 percent of the net value of all fixed business assets in the United States.

In these days when U.S. industry is being more and more challenged, both at home and abroad, it is especially important that we take steps that will expand the ability of U.S. business to capitalize on these electronic tools and thus increase our productivity and competitiveness.

PUBLIC DIVIDENDS

We are also talking about ensuring that the ordinary residential or small business telephone subscriber has access to the latest technology and newest computer-related services.

The latest tally of U.S. information service vendors indicates we have only about 2.3 million subscribers in the United States—most of which represent businesses. That is half the number of French telephone customers who currently subscribe to just France Telecom's Minitel service.

By comparison, the United States has about four times the population, five times the number of phone lines, and seven times the Gross National Product of France.

Information services have the potential to make a significant, direct contribution to consumer's welfare. Establishing a sound regulatory regime which will help make that happen, while minimizing risks of harm, constitutes a major—but very important—challenge.

CONCLUSION

That concludes my prepared statement, Mr. Chairman. I would be pleased to respond to any questions which you or the Subcommittee may have.

QUESTIONS OF SENATOR DANFORTH AND THE ANSWERS THERETO

Question: "Why is Open Network Architecture (ONA) important?"

Answer: As reviewed in detail in NTIA's prepared statement, ONA, first, will provide information service offerors more communications service options which, in turn, should make it possible for those firms to provide their customers more and better information services. ONA, second, will ensure more competitive information service market conditions. It will help provide the basis for competitive information service offering by Bell companies and AT&T—without costly and inefficient separate subsidiaries. Growth in the information services sector generally should be stimulated as a result. Additionally, ONA should yield more extensive and efficient use of telephone company plant. That, in turn, should have a positive effect on overall carrier costs, and thus help keep basic telephone costs low.

Question: "What is the rationale for changing from the regulatory requirement for separate subsidiaries to nonstructural safeguards such as ONA?"

Answer: The Federal Communications Commission (FCC) recognized that its separate subsidiary requirements would impose costs when it established such requirements for AT&T and the Bell companies in 1979. The FCC determined, however, that those costs were not disproportionate to then-prevailing competitive risks, and that then-existing regulatory safeguards were insufficient. The FCC's balancing of various concerns and interests thus reflected the communications and information industry environment which existed in 1979, nearly a decade ago. Since 1979, that environment has radically changed. In addition to the Bell System breakup, the information services industry today is increasingly competitive. It encompasses major companies including General Electric, Mead Corp., McDonnell-Douglas, Boeing, Dun & Bradstreet, and others. Existing separate subsidiary requirements now appear to be impeding technological progress and preventing the bringing of new services to the public.

Beginning with a detailed 1985 report on domestic communications and information policies and following up with a number of filings with the FCC, NTIA recommended that the FCC tailor its safeguards to reflect current, not past market conditions. Following extensive proceedings, the FCC determined that less costly and intrusive safeguards would be sufficient, a determination which NTIA strongly supports.

Question: "Is it important to implement ONA now?"

Answer: ONA is an evolutionary process that will take time to complete. The process of moving toward ONA should begin now, however, for several reasons.

First, ONA will mean more effective use of business sector computer investment, and resulting productivity gains. Estimates are that computer products today constitute about one-quarter of total business investment in equipment, compared with about 5 percent in the mid-1970s. That greater investment in computer products, however, has not always produced commensurate productivity gains, in part because some lag in the availability of communications links to facilitate computer interaction. If that shortfall is remedied, the U.S. economy should be able to benefit more fully and faster from investment in computer products. The sooner greater productivity is achieved, the better it will be for the United States in absolute terms.

Second, other countries including our major trade rivals are moving rapidly toward more efficiently integrating their communications and computer resources. If the United States is to remain as competitive, we must move as rapidly—and, hopefully, more rapidly—to accomplish the same objective. Third, ONA should result in making a broader range of new information services more widely available. The U.S. information services industry meets most of the immediate needs of major corporate users well. That is less true, however, in the case of smaller business customers, and much less true in the case of ordinary residential customers where the United States currently lags other developed countries. Again, the more rapidly progress toward ONA commences, the faster new information services will be made available to smaller business and ordinary residential customers who, to date, have been prevented from directly benefiting from the most advanced information technology.

Question: "Will customers in rural areas benefit from ONA?"

Answer: ONA obligations currently apply fully to Bell companies, and to AT&T as well (although requirements are somewhat different). Most of the Bell companies serve a substantial number of rural customers as, of course, does AT&T. In general, they provide their rural customers with the same choices available to their urban customers.

In a number of rural communities, experience to date suggests that access to the full range of information services for most small business and residential telephone customers will depend on Bell companies having the opportunity and financial incentive to offer those services. Some customers in major metropolitan areas—where many communications and information companies in addition to phone companies operate—typically have a range of choices today. That is much less true in less well-populated areas.

Additionally, the changes in communications network offerings encompassed by ONA should make it more commercially feasible for information service offerors not affiliated with established telephone companies to expand their service to include rural areas.

Question: "What are the advantages and disadvantages of uniform ONA plans?"

Answer: They are no different in this sector than in many other sectors. Uniformity typically brings greater parity of opportunity, ease of use, and may ensure services and choices are available more universally. On the other hand, requiring too much uniformity can impose excessive costs. Where demand, at least potentially, does not warrant such expenditures, the result may be that all customers may not have the choices and services available that they could. A requirement that there be a uniform approach can also lessen the potential for service innovation. At the same time, uniformity may foster greater price competition, including "yardstick competition" among phone companies.

There is no single answer to this conundrum. What is needed is a sound balance. In general, NTIA's preference is to "tilt" toward greater uniformity, all other things being equal, in order to minimize any chance of a "Balkanized" telephone and information services industry, as discussed in detail in NTIA's prepared statement. By the same token, there is clearly some need to tailor offerings to particular market conditions, to minimize unnecessary costs, and to maintain the opportunity for service innovation.

Question: "In March, Judge Greene decided to allow the Regional Bell Companies (RBOCs) to provide transmission for information services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be?"

Answer: Presumably due to (a) remaining severe consent decree restrictions, (b) pending appeals from the AT&T consent decree court's rulings regarding "information services," as well as (c) the difficulty getting "Comparably Efficient Interconnection" and ONA plans approved, in order to be freed from existing FCC "separate subsidiary" requirements, Bell companies appear to have moved very cautiously in offering new services to date. A number of telephone companies including the Bell companies have announced that they are in the process of developing some possible new services. New services have been offered on a limited, experimental basis. But there has not yet been a significant increase in the choices available to most telephone customers.

Over time, providing the Bell companies—firms with the financial resources and expertise—the opportunity and incentive to offer information services should have a very positive effect. In addition to increasing competition and thus stimulating demand, making information services more widely available entails significant outlays. It is obviously reasonable to assume that the information services market will develop faster with the participation of these companies (which comprise more than half the total resources in the telecommunications industry) than without them. NTIA has thus petitioned the FCC to assert its proper authority and allow the Bell companies to offer information services, despite the remaining unwarranted restrictions imposed by the consent decree court.

Question: "How does the NTIA approach to ONA differ from the FCC's?"

Answer: As discussed extensively in our recommendations to the FCC, our approach differs in that it:

Places greater emphasis on closer cooperation between telephone companies and information service offerors, working together through a balanced inter-industry committee to identify offerers' legitimate needs, carrier operational requirements, and potential areas of disagreement well before they rise to the level of full-fledged conflicts requiring regulatory resolution; and,

Accords greater weight to the need to ensure a degree of Bell company uniformity, while calling for industry and regulatory acceptance of a specific list of agreed-upon guiding principles.

Our approach was premised on the need for both information service offerors and the Bell companies to recognize more fully that they have a mutuality of interests, and to be willing to work together to expand the services to the public that both industries offer. Our approach also envisioned these industries working together on a less adversarial basis than before.

[Recess.]

Senator INOUYE. Mr. Secretary, you have spoken eloquently of competition, but I gather that the competition you speak of would be competition within the American continent, within the States. There is a matter of major concern to most Senators, if not all, that often times we may take actions in law making without realizing the impact it may have on international competition.

For example, you will have a school of thought that suggests that the breakup of the great telephone company may have been good from the standpoint of antitrust laws but it may have had a negative impact upon the role we play in international communications.

I am asking you because I do not know.

Mr. SIKES. I think that the impact would be somewhat indirect. What I meant to state in my opening statement is that I think the availability of advanced information services can have a great deal to do with giving individual companies that use those services more economic strength, more competitive strength in their ability to then compete internationally.

Now, when I talk about competing internationally, I am speaking of competing in other markets, but I am also talking about competing against other companies in the domestic market as well.

And so, I think that, allowing or facilitating a more rapid provision of these information services can really help our competitive strength in that way.

Senator INOUYE. Is uniformity very important?

Mr. SIKES. Well, I think it can be over-emphasized because the seven Bell companies are somewhat different. They serve different parts of the country. I think one would look at U.S. West and its vast territory and the terrain difficulties it has to overcome, compared to NYNEX and its more compact territory and its service of more densely populated communities lacking some of the severe terrain differences, and conclude that requiring U.S. West to do things exactly like NYNEX does not make a great deal of sense.

On the other hand, I think one of the very affirmative attributes of the unified company we chose to break up was it had a unifying influence. And I think to the extent that we allow a Balkanized telephone system to develop, that is Balkanized beyond legitimate differences, it weakens our country.

Senator INOUYE. You spoke much about the cooperative process, and we have been advised by Mr. Brock that as of this moment, 29 state regulators have filed statements, and I presume expressing different views. Specifically, what did you have in mind in a cooperative process?

Mr. SIKES. Let me preface this by saying that I think one of the challenges that we face in our country is finding ways in important matters to cooperate to an extent beyond the current kind of litigous nature of our society.

I think if ONA is born out of extensive adversarial proceedings, andprotracted appeals, we will be the weaker for having it born in that manner.

We certainly know that in Europe, we certainly know that in Japan, there is a higher level of cooperation and of coordination and I think we have to point toward a U.S.-style higher level of cooperation and coordination.

Now, in my view, the FCC has an affirmative obligation to work very closely with state regulators. It should not only act in setting the interstate ground rules, but it should work toward states being comfortable with the interstate ground rules, because if they are comfortable with the interstate ground rules, I presume we are going to see a reflection of the FCC's leadership in the 50 states and I think that is important.

The reason we have put forward this inter-industry committee, as the centerpiece of our recommendations, is that if each of the two major industry groups will come together, will generally follow a set of principles, and we have laid out nine principles, each will give some; then we think what will happen is that we will have a plan that will not be seriously challenged; that will not be seriously delayed by protracted legal disputes. And, most importantly, will not involve government

bureaucrats dictating how the plan should be constructed. Because if government bureaucrats do that, what we run the great risk of is the cost exceeding the benefits.

And I think if the businesses get together, knowing the industry, knowing something about both demand and supply, and reconciling their differences, we believe that we can avoid those kinds of extraordinary costs that might otherwise result.

Senator INOUYE. Now, you spoke of the cooperative process found in Europe and in Japan, but is it not true that often times this process is brought about by government pressure or government subsidy or government incentives involving bureaucrats?

Mr. SIKES. Certainly.

Senator INOUYE. Should this government be also involved in that type of process?

Mr. SIKES. Well, this government is involved head-over-heels in the telephone business and that is just a fact. The NTIA position has been that the government does need to be involved in this; that it cannot walk away from this, but it should also put heavy reliance on industry. We have tried to maintain that sort of delicate balance.

Senator INOUYE. Do you believe that Judge Greene has a role in the reviewing of the ONA plans and the process?

Mr. SIKES. No, I do not. In my view, the further away the court is from regulating the telephone business the better. And we, of course, have urged Judge Greene to go further than he has gone in allowing the Bell Operating Companies to provide information services. We have urged him to allow them, with certain competitive safeguards, to manufacture.

So, I think what he has to do is be content with the fact that the jurisdiction for accomplishing fair and equitable provision of services is with the FCC; that the FCC will bear correctly and ably its obligations and he should act as speedily as possible to relieve the Bell Operating Companies of the limitations they face.

Senator INOUYE. But as you know, he has maintained his ability to intervene in case of discriminatory conduct. Would you deny him that?

Mr. SIKES. No. No, I think that in the area of manufacturing—of course, the companies are now prohibited from manufacturing, so, I guess there is not a lot of intervention that is necessary. You know, we fundamentally believe that advanced information services jurisdiction should be with the FCC in total and not with the court at all. We have filed a petition with the FCC to that effect and asked them to exercise that jurisdiction.

Senator INOUYE. Mr. Assistant Secretary, I thank you very much for your help this morning.

Mr. SIKES. Thank you, Mr. Chairman.

Senator INOUYE. Our next witness is the Commissioner of the New York Public Service Commission, Mr. Eli Noam.

Mr. Noam, welcome, sir.

STATEMENT OF ELI NOAM, COMMISSIONER, NEW YORK STATE PUBLIC SERVICE COMMISSION

Mr. NOAM. Thank you, Mr. Chairman, for the opportunity to appear before you today. While I am here to testify as a state commissioner, I do not necessarily speak for all state commissioners or for OUR national association, NARUC. NOR do I speak as someone SOLELY concerned with jurisdictional prerogatives.

The states are interested in an active and constructive participation in the ONA process, and I am encouraged by the signs from state and federal regulators that they are moving away from the past confrontational style and towards a more cooperative spirit. I am also pleased at the Committee's interest in this important matter. I hope that it can play a constructive role in establishing collaboration between the states and Washington.

For better or for worse the future of the network system in advanced countries adhering to market economies is not one of simplicity but of complexity. We are merely at the beginning of that process.

The network of the future will be a pluralistic confederation, a network of networks, domestic and multi-national, hardware and software, specialized and general, private and public.

In such an environment the key requirements are the interconnection and access of the subnetworks into each other. If you leave control over interconnection and access to the strong, they will squeeze the weak.

Power over interconnection had led to the dispute between AT&T and MCI and to the subsequent meat cleaver approach of divestiture which caused so much disruption.

Now, if you didn't like this last divestiture, you certainly will not like the next one which is unavoidable in the long term, unless sensible rules of inter-connection and level playing field are set now.

That future divestiture would split the local exchange companies into their several components; basic transport, central office and enhanced services, by the same logic of William Baxter and Judge Greene, only about 15 years later.

If you do not like that scenario, and I do not, it would be much better to set rules of the road that everybody can live with and which permit all participants in this quarreling network family to share, interact and grow. This is what ONA is all about and this is why it is of such importance.

This time the issue is access to the heart and the brains of the network, its central office switches. The question is how to provide such access to the various communication service vendors as a matter of right and how to link most of their own service elements to those of the telephone companies.

Because the rules of interconnection become one of the most important tools of regulation, whoever controls these rules controls the network system itself; therefore, for the FCC to establish a federal predominance over interconnection to local exchanges is to establish federal control over local networks themselves, since the contradictions and treatment of largely identical service elements would not permit a stable dual regulatory system to co-exist.

There are, of course, important industry groups which desire policy uniformity to complement technical standardization, but they usually do not consider its more hidden cost in terms of innovation and flexibility. A more careful analysis establishes the need for a system in which uniformity and diversity co-exists, as is true for much of the economic and political system of this country.

For example, it makes no sense to have uniform prices or pricing rules across the country without regard to local costs, local conditions of demand, population densities, competing services, et cetera.

No doubt, the desire for uniformity will lead to calls for federal preemption, but such preemption will not work because it cannot be limited to ONA. Federal preemption would establish prices for service elements that are likely to be different from those of comparable services presently tariffed by the states. This creates the potential for arbitrage and for conflict.

Therefore one can have uniformity only if one preempts state tariffing of most services and not just for ONA elements. And to do that would be an unprecedented challenge to federalism.

Now, at the same time it would be unrealistic and parochial for the states to ignore the need for many elements of national, technical and definitional uniformity.

Unavoidably, friction will develop in the process of setting present and future ONA rules. The key element for ONA is therefore a system of dispute resolution and coordination that is fast moving, broad-based and with undisputed legitimacy.

This would include, first, an inter-governmental ONA forum of the FCC and of the states, which would, for example, define those basic functions where national uniformity is important and establish others where regional or local diversity makes sense.

It would include, second, a private sector ONA forum with a balanced representation of the various industry and user interests. This body would be responsible in the first instance for technical coordination, standards, service definitions, et cetera. It would operate in a flexible and informal fashion. Where an agreement could not be reached by the parties, an arbitrator could draft a recommendation.

Agreements would be reviewed by the inter-governmental ONA forum and certified to the FCC and the states for their adoption, if they so choose.

To conclude, Mr. Chairman, I believe that the primary issue is not what the perfect ONA plans are, but rather, how to structure a process which allows for rational change. This is not a zero sum game situation, but one where the multiple interests can jointly gain by enhancement of the entire network system.

What is needed at this point is for someone to help bring the states and the FCC together, and I believe that this committee could play an important role in such an effort.

Thank you very much for your attention.

[The statement follows:]

STATEMENT OF ELI M. NOAM, COMMISSIONER, NEW YORK STATE PUBLIC SERVICE COMMISSION

Introduction

From my contact with other regulators it is clear that the states are interested in active and constructive participation in the ONA process. I am encouraged by the signs from state and federal regulators that they may be moving away from past confrontations and toward a more cooperative spirit. And I am pleased at the Committee's interest in this important subject. I hope that it can play a constructive role in establishing collaboration between the states and Washington on ONA.

To understand the developments leading towards on open network, one must first step back and look at the broader trends. Two basic forces shape change in today's telecommunications' networks:

a) the integrative forces of technology which push towards ISDN and integrated broadband networks, and which raise barriers to entry;
b) the social and economic forces of pluralism, which move the network towards a decentralized and segmented federation of sub-networks.

The tension between these forces is most pronounced on the front where they intersect: the rules of interconnection of the multiple sub-networks into the integrated whole. Such interconnection is an extension of traditional common carrier principles from users to networks. In coming years policy makers must structure ways in which network interconnection is granted, defined, policed, priced, and harmonized. Specifically, "Open Network Architecture" rules must be formulated in proceedings presently before the FCC and several states. A host of questions must be dealt with, involving technical standards, national uniformity, international collaboration, and the nature of the decision-making process in telecommunications policy itself.

Regulatory structure in telecommunications has paralleled the stages of the industry itself. The monopoly stage of industry structure was accompanied by the regulatory stage of price and profit regulation. The breach of monopoly was tracked and sometimes facilitated by regulation focusing on industry structure. We have now reached the next stage, in which the network is rearranged from a centralized star-like structure into a matrix of interconnected but decentralized networks. This moves the focus of regulation to encompass, besides traditional consumer protection, also a networks-protection -- mediating, where necessary, the interaction of the various carriers, network operators, users, and equipment manufacturers.

The key regulatory issue of this new network system is interconnection. Over the next few years, the main regulatory decisions that will shape the network of the future will be in this area. "Open Network Architecture" is the main regulatory battle ground on which the rules of interconnection will be set.

In my view, pluralism is the key concept of future telecommunications -- both in terms of the shape of the network itself, as well as for the process of policy formulations. Therefore this testimony discusses very briefly the reasons why the traditional centralized network system is disintegrating; it then identifies interconnection as the key regulatory issue of a pluralist network; specifically, it discusses problems associated with Open Network Architecture interconnection; and it shows how the states must be intimately involved in these issues, unless one wants to do away altogether with meaningful state regulation of telecommunications. Finally, it proposes a framework for decision-making for interconnection issues, both on the inter-governmental and the inter-industry levels.

Background

Interconnection was a policy issue from the moment that the original Bell patents expired in the late 19th century and rival carriers emerged. AT&T re-established control to a significant extent by restricting its ability to interconnection of rival local networks into its own local networks as well as longlines. For a contrary view, see Milton Mueller, Open Interconnection and the Economics of Networks. Unpublished paper, University of Pennsylvania, Annenberg School of Communications, June 1988. It took a strong Justice Department challenge and its resolution in the so-called Kingsbury Commitment of 1913 to resolve these issues and assure interconnection.

The system was stable until the late 1960s, when its resistance to change was successfully challenged, first for equipment interconnection (Carterfone, 1968) and later for the interconnection of rival long-distance companies (Execunet, 1977). AT&T dragged its feet in assuring easy interconnection to its competitors, and this became a major factor in the government anti-trust law suit and AT&T's subsequent dismemberment.

At the same time, issues of software network interconnection were being considered in the FCC's Computer Inquiries I (1971), II (1980), and III (1985). Critical issues were, among others, the conditions under which AT&T and later its successor companies could provide enhanced telecommunications services. A policy emerged which required them to provide non-discriminatory interconnection to other enhanced service providers as a condition for their own right to supply such services. The companies were also required to establish fully separated subsidiaries. This condition was relaxed in Computer III, but the Bells and AT&T had to establish Open Network Architecture (ONA) arrangements (to be preceded by a preliminary stage of Comparably Equal Interconnection, CEI) that specified interconnection arrangements to the core of local networks, the local exchanges. To make such arrangements meaningful, they had to provide for the unbundling of the elements of these exchanges, such as basic switching, call forwarding, etc.

ONA, in concept, aimed at permitting separate access, interconnection, substitution, and competition with each of the basic elements of the exchange. It sought to provide greater ease in establishing layers of software defined networks superimposed on the basic transport functions. ONA Draft plans were submitted in February, 1988.

The entire 20-year policy sequence of opening the network was virtually totally controlled by the federal level of government -- FCC, Justice Department, Judge Greene, and the D.C. Court of Appeals. The states, through their public utilities commissions (PUCs) fought a long string of losing defensive battles.

Now, with Open Network Architecture on the policy agenda, two interrelated questions were raised:

(a) What kind of rules should there be for local exchange interconnection?
(b) Who should set such rules?

These questions are interrelated, because an allocation of regulatory competency to a particular governmental level can be outcome-determinative in terms of policy. For example, leaving corporation statutes to the states has led to some inter-state rivalry for incorporations, led primarily by Delaware, and over time this has brought about a marked relaxation of restrictions on corporate management. But the two questions -- substance and jurisdiction -- are also philosophically interrelated.

Open Network Architecture as a concept of liberal local exchange interconnection is a continuation of strengthening the values of decentralization, openness, and reduction of hierarchy. As a regulatory concept, it was not demand-driven, but was put on the agenda as a conscious philosophical choice by the FCC, although essentially correctly in line with anticipated change. Yet this decentralizing philosophy is not accompanied by the FCC's acknowledgement of similar decentralization on the level of policy formulation. To the contrary, the FCC and various industry groups often believe that industry diversity must be accompanied by a policy monopoly of the central government. The problem with this dichotomy will be outlined below.

We are merely at the beginning of what will be a lengthy process of change. The future network system is one of great institutional, technical, and legal complexity. It includes national and regional carriers, local exchange companies, specialized service providers, cable television companies, domestic and international satellite carriers, LANs and WANs, private networks, shared tenant services, and value-added networks. The network environment will be, essentially, a pluralistic network of user associations, a network of networks which are part overlapping, part specialized along various dimensions such as geography, price, size, performance, software value-added, ownership status, access rights, specialization, etc.

This is not to say that economies of scale and scope will become irrelevant: there will still be broad-based public networks, and powerfully integrated networks with broadband capability. But just as important will be the economies of group specialization and of clustering. These differentiations will permit users with similar needs, or with frequent interaction, to operate on more efficient networks. It will also permit public networks to be more efficient for their clientele, since they need not be all things to all people. Whereas in the traditionalist model standardization was a key element, the new pluralist model is characterized by a stress on interconnectivity.

The notion that networks can interconnect into other networks, even if they are competitors, is the key requirement for the functioning of such a system. That is, a quasi-common carrier-principle is extended from users to networks. Both in the United States and the United Kingdom, the establishment of interconnection of new networks into the existing and predominant one turned out to be critical.

Jurisdiction Over Interconnection

In such an environment, the rules of interconnection of newcomers to the public network becomes perhaps the most important tool of structural regulation. Whoever controls the rules of interconnection controls the network system itself. The question is who controls the rules for interconnection: the FCC, the states, or both. For the FCC to establish a federal

predominance over interconnection to local exchanges is to establish federal control over local networks themselves, since the contradictions in treatment of largely identical service elements would not permit a stable dual regulatory system to coexist over time.

This leads to four major options for jurisdictional power:

(a) an expulsion of the states from the area, which would create major political battles, deprive the policy field of a major source of innovation and experimentation, and eliminate an important element of policy stability.

(b) a full federal withdrawal, which could lead to the U.S. as a telecommunications-Lebanon facing a world of telecommunications-Japans.

(c) non-cooperative coexistence characterized by continuing litigation, delay, uncertainty, and manipulation by various industries' forum-shopping, and ultimate instability. Or

(d) an institutionally collaborative approach, as outlined further below, which establishes a balance between national uniformity and regional and local diversity.

There are, of course, important industry groups, in particular the ESPs, which desire policy uniformity to complement technical standardization. Those arguing for either or both are usually counting their obvious benefits but not considering their more hidden cost in terms of innovation, flexibility, and process. A more careful analysis establishes the need for a system in which uniformity and diversity coexist, as is true for much of the economic system of this country.

State regulatory commissions have only recently begun to explore ONA. New York and Maine have proceedings, California has a task force, and several others are studying the subject. All eyes are on the FCC because of its ongoing rule-making, and some states harbor suspicions reserved for ideas initiated by the FCC. Others view ONA primarily as an attempt to unchain the BOCs. The FCC, for its part, sent out mixed messages to the states. These perspectives, supplemented by mutual incantations of jurisdiction, will not get the issues developed. States must be involved in the substantive policy analysis of ONA issues beyond the jurisdictional question if they are to have a constructive role to play in the potentially far-reaching interconnection developments that are affecting their traditional role in exchange services. And the FCC must recognize that they are part of the process.

There was a time, as recently as 1985, when several of the Regional Holding Companies embraced ONA as a vision of the future. Some of their Computer III filings before the FCC showed innovative thinking: They combined the opening and disaggregation of the central office functions with deregulation and entry into information services. Perhaps for the first time they proposed making it easier for their competitors to access the network. They seemed to understand that the network was their most important asset, and that its intense utilization was in their own best interest.

But now, in their February 1988 ONA plans, a more cautious spirit has taken over. Partly because the FCC gave the Bell companies little time to plan or implement, the plans, while a step in the right direction, concentrate on the here and now, and largely repackage existing offerings or those features already contemplated. Judge Greene's initially more negative holdings on RHC participation in information services may have also had an impact by reducing the quid of new deregulated opportunities for the quo of opening the network to further interconnection. RHCs also may have been cautious due to some uncertainty about the role of states in ONA. Possibly, too, the RHCs wanted to keep down the cost of the unbundling process. And certainly, the mammoth task of the plans was enormous, and the documents produced are evidence of long and hard work on a very new issue. But whatever the reason, the filings could not deal with several of the longer-range implications of ONA, but were framed more narrowly.

These long-range effects include:

* a future competition in exchange services, including potential incursions across franchise territories by other LECs' exchange services and even facilities.

* a major enhancement in the possibilities of bypass and of private networks.

* built-in strains between the main elements of LECs -- local transport and exchange -- that could lead in the future to a full-scale structural separation.

* a move towards a "distributed" rather than centralized physical architecture of public central office functions, analogous to the computer industry's evolution into distributed processing.

Interconnection and Local Competition

Discussion of ONA often centers on access for Enhanced Service Providers, thus giving the impression that the issue revolves around software networks. But the principles of

interconnection and unbundling really go much further. The FCC has already decided that interstate ONA elements, while based on expressed ESP needs, should be available to anyone, not just to ESPs. This could -- now or later -- include also a wide array of interconnectors with interstate traffic, such as AT&T, the OCCs, long-distance re-sellers, facilities bypassers, private networks, independent telcos, cellular operators, RCCs, other BOCs, and even international or foreign carriers.

This has major ramifications. For example, bypassers could transport interstate traffic (on their own or on leased lines) to the LEC's exchange, have it switched there, and take at least the interstate part (depending on state rules) of the rearranged traffic to its destination. Similarly, they could use the LECs' subscriber lines and switches as a feeder system for their own trunks to major destinations, including to interexchange companies. The distinction between private fixed networks and public switched ones would blur further. Competitive regional and local exchange companies could rapidly emerge, in particular if states adopt intrastate rules similar to the federal ones. And LECs may start to compete with each other for the business of switching the traffic of bypassers, independent telcos, or cellular operators. Interexchange carriers, similarly, could in effect enter local distribution.

In the absence of assured regulatory protection, the BOCs established an in-house containment strategy, which seems to avoid, if possible, the rental of pure switching functions. The FCC intended ONA as an aid to competition and innovation. A fundamental direction was that local exchange companies unbundle exchange services into discrete Basic Service Elements (BSEs) that could be bought separately and as needed by users.

However, apparently to prevent pure transport interconnection, or to avoid ESP exchange access through other carriers that would permit the piece-mealing and bypassing of their networks and challenge the existing pricing structure, the RHCs now uniformly seek to establish something called BSAs, (Basic Serving Arrangements). BSAs consist of two or three elements: an access link from the interconnector to the central office; basic central office functions; and transport between central offices. Different types of BSAs are offered, analogous to present access line arrangements, such as circuit and packet switched service or private-line circuits. By establishing BSAs the RHCs in effect side-step an important part of unbundling. To mix metaphors, they unbundle the bells and whistles, but not the meat and potatoes. Basic switching is not considered a BSE, only the feature add-ons are. And in order to get a BSE, one first needs a BSA, too. Sometimes BSEs require a particular BSA, such as a private line.

Unbundled access, however, is what some users desire. This is what the contentious issue of "collocation" is about. Briefly, some carriers such as New York's Teleport Communications wish to terminate directly in the physical location of the LEC's exchanges themselves, and locate the necessary equipment on the latter's premises, rather than reaching the exchanges via LEC-provided lines. The LECs resist, arguing that physical access by any other carrier could create operational and logistical problems. Collocation raises a whole host of pricing and technical issues that are too lengthy to consider here. One response has been to suggest "virtual" collocation, the "virtual central office," "mid-air meets" or some other surrogate access to LEC premises. The FCC, so far, has refused to mandate physical collocation because it believes there may be other and more cost effective ways to minimize access costs, and it did not want to chill their development or the establishment of contractual arrangements.

These are ONA scenarios for the future, though not a very distant one. They continue trends begun by the emergence of powerful PBXs and private networks, shared-tenant services, and bypassers. But they make further entry more readily possible for small users. These changes must not be viewed as necessarily negative if they would lead to substantial technological innovation and cost efficiencies, and if the new networks, too, would have to support basic service for the poor.

In any event, if the experience of two decades is a guide, such developments cannot be prevented in the long run by regulatory means; but they can be channeled to affect an orderly transition. To deny states a role in this issue is to deny them a substantial part of their ability to affect the nature of local service. Conversely, to leave ONA interconnection entirely up to each state could create problems of incompatibility. Local service is traditionally a state concern. Here, this responsibility overlaps with a federal policy of assuring unobstructed interconnection. Reasonable federal-state accommodations must be worked out.

How Much Unbundling?

The ONA plans of the Bell companies indicate that only about 40% of the requested BSE requests will be met in the near future. Many requests will never be satisfied. Still others may have never been made, because ESPs expected them to be denied, or they did not wish to tip off competitors -- including the RHCs themselves -- to ESP business plans.

The RHCs wish to reject requested BSEs because they are technically infeasible, impractical to unbundle or to bill; uneconomical to provide; requiring excessive customization; or out of bounds under the MFJ. Some RHCs plans consider as a

potential factor for rejection a negative revenue or technical impact of a BSE on their already existing or forthcoming features and services. Several RHCs, having recognized the business opportunities of some BSEs, find a requested BSE feasible while others do not, or not yet. All of these road-blocks to a BSE require regulatory attention if ONA is to provide access as of right.

It is important to recognize just how complicated these questions are. How finely unbundled should BSEs be? How fast should they be deployed? Who should pay for their development? How standardized should they be across the country and across customers? How customized can they be, and if so, how should the costs be distributed? Can BSEs be resold? What should the extent of facility unbundling be, when at the same time technological forces strengthen the importance of integration, such as in ISDN and integrated broadband networks? What about interconnection to telcos' software programs, data bases, storage capacity, signalling channels, network management functions, billing arrangements, technical specifications, or customer information?

Pricing

How to charge for ONA-type services is one of the critical questions for suppliers and users. The telephone companies seem to accept the prospect of state regulation of ONA pricing, i.e., of decentralized and non-uniform prices. On the other hand, most ESPs maintain that they want nationally uniform rules and rates, service definitions, interfaces, installation, even administrative procedures -- at least for "standard" BSEs -- and such uniformity requires FCC preemption.

This is an understandable interest on the part of ESPs, many of whom are fledgling firms which desire compatibility and portability around the country. The need for national uniformity in pricing of BSEs and BSAs is not as compelling as, e.g., for basic protocol standardization, as long as pricing is not used to manipulate the competitive environment. It makes no sense to have uniform prices or pricing rules across the country without regard to local costs, conditions of demand, alternative offerings, technological state of the network, demographic and economic characteristics, etc.

No doubt, the desire for national uniformity will lead to calls for a Federal preemption of conflicting state pricing regulation. But such preemption will not work, because it cannot be limited to ONA. Federal preemption would establish prices for BSEs or BSAs that are, as likely as not, different from those of comparable services presently tariffed by the states for intrastate use. This creates the potential for arbitrage and conflict. One can therefore have uniformity only if one preempts

state tariffing of most services, and not just of BSEs, i.e., if state rate regulation is largely cut off. To do so would be an unprecedented challenge to federalism in telecommunications regulation, and this would be unwise in almost any respect.

Furthermore, because price determines the quantity of demand, taking pricing out of states' hands also denies them an essential tool for another of their traditional goals, that of assuring universal service. Instead, the FCC and the states should agree on a framework of broad guidelines that prevent confusion and incompatibility.

Thus, state regulators will soon have to deal with the nuts and bolts of BSE charges. One basic question will involve the principles for pricing BSEs. Few would disagree that the costs of new service should be borne by those who cause them. But this is a cliche without much analytical content. Besides, what are the costs of implementing ONA, and what are the revenues it will generate? It would be helpful to have an estimate of how much the ONA interconnection regime is going to cost, in particular net costs, i.e., those over and beyond costs that would be incurred anyway, e.g., for the introduction of the signalling channel system, CCS-7. Nynex, in a filing to the New York PSC, estimated ONA-related revenues to exceed $1 billion in 1994. (It is not clear, however, if these are "new" revenues, or whether they include previously bundled services.)

At this point, the Bell companies anticipated pricing policies are quite diverse, reflecting variations in monopoly power, regulatory regimes and business strategies.

* Some RHCs state that their BSEs will be cost-based. (Ameritech, US West).

* Others talk about market pricing, i.e., they will try to charge what the market will bear. (Nynex, Bell South, Bell Atlantic).

* A related approach are negotiated rates which permit price differentiation among users. (SW Bell, US West).

* Several plans imply that some ONA services could be a source of subsidy for the rest of the network. (SW Bell & Bell South).

* Others could be ready to consider subsidizing BSEs, at least in the beginning, in order to promote new services. (PAC TEL).

* Some seem to prefer a "parity pricing" in which they cannot charge their own ESPs less than their competitors, but where these charges are above cost.
* No carrier advocates a classic rate-of-return-based

pricing, although some will follow pricing for similar services which may be based on it.

From the state perspective, tracking and recovery of ONA implementation and ongoing costs will be difficult. The integrated structure of regulated BOCs and BOC-ESPs, together with the complexities of joint and common cost allocation make it difficult to detect cross-subsidies or unfair competition. The FCC views the Part X accounting rules as a major non-structural safeguard against cross-subsidization. Many states are currently involved in establishing such rules for their own jurisdictions. The provision of adequate data is essential for any regulatory regime in ONA. It is also necessary to separate the interstate and the intrastate elements of ONA-type services.

A large number of questions need to be resolved. Who should bear the risk of developing and introducing BSEs (and BSAs, if approved)? States do not wish to see ratepayers become involuntary venture capitalists. Must each BSE/BSA be priced according to the same principle, or depending on market conditions? Some BSEs/BSAs may face competitive offerings, while others do not.

In a dynamic environment, there are no easy answers, and the implementation requires the messy task of separating cost and revenues of BSEs tariffed under different principles, and of regulated BSEs from various unregulated functions such as billing. Must each BSE/BSA's revenue cover its own cost, or only in the aggregate? And if not, could there be cross-subsidization that would distort competition?

Conversely, could BSEs be defined so finely as to permit undue price discrimination between users? How much flexibility should there be in the rates? Can users be charged according to negotiated rates, making price discrimination possible? Or are such negotiated rates helpful in ensuring that needs for customized BSEs are met or that later entrants are not overcharged? Similarly, should it be possible for an ESP to obtain exclusivity to a BSE in return for its special development? Which cost definition is used -- average, incremental, fully distributed, etc.? A large number of BSE requests were for voice analog services such as voice-mail. It seems that segments of sophisticated data service usage has already left the public network. Should there be pricing incentives to bring them back?

Another set of questions relates to what happens to existing services. Are they to be unbundled into oblivion? Who then is to pay for such "stranded" services? Some, presumably, will disappear. Others will be repriced, or their BSE/BSA aggregate counterpart will lead to a different price than before. Could this affect some users negatively? The answer is yes. It is

easy to proclaim a principle that no interconnector should be worse off than before, but this is a promise hard to deliver. In a wide-ranging restructuring of rates such as ONA may cause, there are not enough degrees of freedom to keep everybody ahead while avoiding all inconsistencies.

A Level Playing Quagmire?

ONA is designed to equalize competitive conditions for the broad array of interconnectors such as ESPs, and to permit the BOCs to enter activities from which they had been either precluded or subjected to complicated forms of organizational structure. Some of the advantages of a "home field" have been addressed by the FCC and the RHC plans, including unequal access to technical standards, provisioning biases, etc.

But other questions remain. As discussed, there is a controversy over physical access. The RHCs, in response to FCC guidelines, are willing to charge their own unregulated ESP activities the same as they would unaffiliated ESPs. This sounds good. But to make this parity meaningful they would have to maintain it, even where the BOC-ESP is collocated while its competitors are not. In some circumstances, therefore, the RHCs could end up paying themselves more than cost would require, in order not to undercut the non-affiliated ESPs. Thus, there are situations of a policy trade-off between competitive parity and economic efficiency. States are affected by the trade-off, because BOC revenues are.

Another bump in the level playing field is the extent of access by ESPs to network functions that the BOC-ESP may utilize. Mentioned earlier were telco software programs, data bases, storage capacity, signalling channels, network management functions, billing arrangements, technical specifications, or customer information. On the one hand, many of these functions are needed for a full interconnection and a level playing field. On the other hand, there must be some limits to a "creeping socialization" of privately owned and managed carriers by extending the common carrier principle into its management functions. Furthermore, a full disclosure of technical information may have its cost in terms of innovation, since it may reduce the incentive to develop proprietary technology.

Billing functions and Customer Proprietary Network Information (CPNI) is particularly important, given its potential marketing value, and BOCs have superior access to it under the FCC Computer III decision. If CPNI is available to Bell product developers and marketing managers, they will be able to sift through computerized records in order to develop or market new products. Other ESPs, however, would have access to CPNI only with approval of a customer. To level the playing field either means severely intruding into telephone customers' privacy, or

precluding a BOC from otherwise reasonably available information.

Partly to deal with the competitive problem, Judge Greene, imposed in March 1988 restraints on the use of CPNI information. Adding to the injury, the BOCs are requiring ESPs to provide supporting marketing information in order to assess demand for a new BSE. Thus, the ESPs could alert the RHCs to potential market opportunities. (To their credit, some RHCs have identified this possible conflict and have established BSE reviewers separate from ESP-BOC product managers.) And if BOCs undertake their own studies of the feasibility of BSEs, rate payers as well as non-affiliated ESPs must be protected, as in Part X rules, from bearing the cost of developing information that may benefit the BOC-ESPs.

One way to deal with the privacy issue is to have the BOCs provide to the ESPs, for a charge, data processing service of customer information, including the mailing of letters, unless the customers request full privacy.

Related problems deal with timing. A BOC should not be able to hold off approval and deployment of a BSE until its own affiliated ESP is ready to enter that particular service. BSEs also should not be defined and priced in such a way as to make price-discrimination possible. Nor should departure from national BSE definitions, or the sequencing of introduction, be aimed to give BOC affiliated ESPs a regional advantage over national services.

The BOCs' long-range interest is in a smooth ONA system. It would be a historic mistake for them to stall ESPs. AT&T dragged its feet on OCC interconnection, and eventually the political-legal process became frustrated enough to seek the meat-cleaver approach of divestiture. If the BOCs were to use interconnection as a strategic tool to repress competition, they may be threatened, in a decade or two, by a similar fate, and their exchange operations may become organizationally separated from their transmission functions.

Other Consumer Protection and Universal Service Issues

Regulatory policy must consider the likely effects of ONA on residential users. These customers, many of whom have little use for ONA services, could end up paying more, because unbundling may reduce revenue that has previously subsidized residential service, or because it could permit bypass and other revenue diversions. On the other hand, the volume of traffic and of revenues could pick up. At present, a residential phone is used only about 25 minutes/day. An increase of usage by only 5 minutes/day could thus, increase the revenue-flow from usage-sensitive charges by 20 percent.

ONA also could make it possible to provide small users with

services which in the past may have only been available on large users' private networks. New and useful services are likely to emerge, and the cost of central office switching could go down as a result of competitive incentives. Positive effects, however, are likely to take some time, while costs are more immediate. In the meantime, it would be hard to defend rate increases to the general ratepayers that are due to a restructuring of interconnection if their service is not directly and appreciably improved.

An easily agreed upon policy goal is that ONA should not interfere with the provision of universal service. ONA is primarily an aid for access to the network by software or hardware networks and by voice services; it does not directly affect the access of the individual subscriber to the public network. However, the ability to be reached is as much part of universal service as the ability to originate a call. Thus, if ONA results in the emergence of a system of regionally specialized protocols of exchange carriers that preclude access to or from subscribers in other areas, then universal service is affected.

This, of course, is an argument for some basic national standards. But it is also an argument for a relatively even geographical spread of ONA-capable exchanges. Clearly, ONA will be implemented first and foremost in major business centers. If introduction to rural or depressed areas is slow, a further long-range differentiation in service spectrum from one region to another would become unavoidable. For many states this would not be acceptable on public policy grounds. They would want to have a say in any arrangement that creates an intra-state service gap that is not temporary. Other states may wish to engage in an industrial policy in which they differentiate themselves in the capabilities of telecommunications services.

A related issue is the ability of small independent telcos to provide ONA interconnection. Should they be required to implement ONA, or to mirror the scheme adopted for the BOCs? If the smaller independents are required to offer ONA interconnection, they may have to farm out their exchange services to larger independents or to the BOCs, and this reliance on sub-contractors would ultimately reduce their role and their net revenues. To deal with these questions, states may opt for a subsidy mechanism. Again, there should be room for local choice.

<u>The Need for a Mechanism of Policy Coordination and Dispute Resolution</u>

Unavoidably, friction will develop in the process of setting ONA rules. States must be involved in the process of BSE definitions, for example, because many problems deal with services which they approve and tariff. A key element to ONA is

therefore a system of dispute resolution. Otherwise, courts, commissions, lawyers and expert witnesses will be extremely busy. It should be in the interests of all parties to create an effective, fast-moving, broad-based, and independent mechanism of coordination with undisputed legitimacy. Such a mechanism should include regional sub-groups. A BSE essential to the Manhattan financial community may make no sense for Wyoming.

On the other hand, e.g., remote meter-reading by utilities may be more important in a rural environment than in a suburban one. To establish uniformity would hence burden those states where demand is low, or retard others where it is high. A compromise may suit neither. There is room for regional bodies to support the national one, reflecting the diversity of regions. On the other hand, some common principles can also be in the interest of the states, since their policy goals could otherwise be undermined by competition among themselves -- a "race to the bottom" -- to attract large users.

To some orderly minds any variation from uniformity is heresy. But total uniformity looks better on paper than in reality. Uniformity has its trade-offs in terms of flexibility and choice. A uniform system, like a convoy, moves at the speed of its slowest or most obstructionist participants. Without belittling the value of uniformity, one should also recognize that there can also be value in some inter-Bell rivalry, since diversity can give an impetus to innovation or efficiency, while economic rationality can lead in a competitive system to some convergence and coordination even in the absence of a regulatory requirement.

Also, uniformity should not be equated with preemption by the FCC. Agreements among the states or between the state and federal levels can achieve the same result. Nor is preemption the less time-consuming procedure, since it could lead to endless and divisive jurisdictional disputes that would spill into other areas. Preemption should only be resorted to after a solid evidentiary record establishes clearly that serious nationwide harm is unavoidable otherwise.

States do not favor the Joint Board arrangement, because it leaves the FCC in the driver's seat. Given their view that local exchange issues are part of their traditional jurisdiction under the 1934 Act, they insist on parity at the least. A coordinating mechanism could have a form such as the following dual system:

(a) An inter-governmental ONA forum of FCC and the states, which would be charged with coordinating the various jurisdictional policy interests. It could, for example, establish a hierarchy of uniformity, by defining certain basic functions where national uniformity is important, and establishing others where regional or local uniformity is

sensible. State regulators may wish to constitute themselves into regional forums, again with FCC representation.

(b) A private sector ONA forum which would include a balanced representation, including LECs, ESPs, equipment manufacturers, as well as telecommunications users, both large and residential. The T-1 Committee is one model. This body would be responsible, in the first instance, for technical coordination, standards, BSE definitions, and dispute resolution. It would operate in a flexible and informal fashion rather than be bound by traditional regulatory process. Agreements would be reviewed by the inter-governmental ONA forum and certified to the FCC and the States for their adoption, if the respective regulatory bodies so choose. In those cases where the private-sector ONA forum cannot reach agreement within a specified and fairly short period, mandatory arbitration would govern. On issues of great importance the inter-governmental ONA forum may choose to make a determination instead of an arbitrator.

Outlook

Because several of the major changes in telecommunications policy originated in the United States under a conservative political regime, they are often viewed as the product of particularly American business interests, wrapped in a Chicago economic ideology. But more recently, several other industrialized countries have begun to adopt similar policies, or at least to discuss changes that previously seemed unthinkable.

This raises the question whether the changes go deeper than the nature of the respective governments in power, and whether they reflect a more fundamental change. The policy changes are indeed part of a broad transition in which the traditional notion of the public network -- centralized, closed, and public spirited -- is evolving into a new one that is decentralized, open, and private spirited. This evolving network resembles a loosely interconnected federation of sub-networks, much like the system prevailing in transportation.

The Telecommunications of the future will resemble much more the rest of the economic system. It will be much more complex, and perhaps less efficient in some ways than the old system, but it will be a reflection of an underlying pluralist and market-driven society.

Open Network Architecture is a sensible concept to deal with the forces of centrifugalism; moreover, ONA-type interconnection is unavoidable in the long-term, and within the historical trend of opening the network to new entrants. To defend centralism

from these forces of pluralism is quixotic. Interconnection of hardware and software networks becomes a central issue, and control over interconnection a key element of regulatory supervision. To attempt policy centralization by squeezing the states out of this area is hence to deny them participation in the control of future telecommunications structure, and they will not take to it kindly. On the other hand, for states to fight the principle of open interconnection is to be tilting at wind mills.

ONA interconnection is a much more complicated affair than the earlier opening up of access for CPE or for long-distance carriers. There is much work to be done in a process that will not stand still. Hence, it would be a costly mistake for public policymakers to leave the substantive issues and retire to the jurisdictional battlegrounds. Nor would it be sensible to try to resolve the myriad issues in advance. What is needed is a collaborative effort, based on agreed upon institutions, that can adequately reflect the amalgam of state and federal interest and come up with a consistent set of ONA policies.

The logic that leads to ONA is also the logic of federalism. If diversity and pluralism is the FCC's goal -- of services, competitors, and options -- it must also view pluralism of policy approaches as a source of strength rather than of weakness. And if non-interference by government underlies deregulation, the FCC should be very careful in denying leeway to others. To be result-oriented in seeking preemption is extremely short-sighted. Presidents, Commissioners, and policy preferences come and go, but the Federal system with its balances must continue.

QUESTIONS OF SENATOR DANFORTH AND THE ANSWERS THERETO

1. **Why is Open Network Architecture (ONA) so important?**

Due to the evolution of telecommunications to a varied system of numerous participants, access and interconnection among the various networks and specialized service providers is vital to their efficient functioning. Disputes over control of access between networks led to the disruptive AT&T divestiture of 1984. Even more disruption is in store in the future from subsequent divestitures unless sensible rules of inter-connection and a level playing field are established now. Therefore, in order to avoid the necessity for continued court mandated restructuring, on ONA type arrangement is helpful and necessary.

ONA also has the potential to stimulate competition in areas that have been considered to be dominated by the LECs. If ONA can successfully bring competition into these areas, users could benefit from innovation, increased variety of services, and cost-driven prices. The utilization of the network will likely increase, and there will be less need for tight regulation.

Competitiveness of U.S. business is directly related to the state of our communications network and to the services available on it. ONA will be an important part of improving networks and applications.

2. **What is the rationale for changing from the regulatory requirement for separate subsidiaries to non-structural safeguards such as ONA?**

There is no essential tie between the elimination of structural separation and the institution of an open access regime. One could have ONA without regard to the institutional form of BOC participation in enhanced services. Conversely, one could eliminate structural separations without ONA.

The elimination of structural safeguards can be viewed as a "quid pro quo" for the BOCs to relinquish some control over their networks and permit the development of competitive services rather than a technological or economic prerequisite.

ONA, by itself, is not designed to deal with cross-subsidy issues, and therefore, an effective means of monitoring cross-

subsidies through regulatory oversight is of importance as long as monopoly segments coexist with competitive ones.

3. Is it important to implement ONA now?

It is important to start the process now. ONA will be difficult to implement because of its complexity and the degree of interaction necessary between different industry participants. It will take much time and new levels of cooperation in order to resolve the many issues. It will have to be an ongoing process because not all problems can be anticipated or addressed now. Therefore, I believe that nothing is gained by waiting, but that one should begin the process as soon as possible. This does not mean, however, the rubber-stamping of present proposals.

4. How will customers in rural areas benefit from ONA?

Over time, all network users will benefit from the successful implementation of ONA, due to growing competition, service options, and indirectly from increased use of the network which could increase revenues and lead to reduced basic rates to maintain the network. However, rural users may not see ONA implemented in independent telephone companies or in rural exchanges of the BOCs as quickly as in major cities. In the future, many advanced services could still be accessed by rural end users through long-distance or 800-type arrangements. There are reasons to support some particularly important applications such as specialized agricultural information and forecasting networks, and of user access to such networks. In time, smaller companies, too, will adopt ONA-type arrangements in order to fully serve their customers needs.

It is essential that the deployment of ONA does not disadvantage rural or poor users.

5. What are the advantages and disadvantages of uniform ONA plans?

The advantages of uniformity, arguably, derive primarily from greater industry and service stability, and increased compatibility and portability between different hardware and software developed by diverse competitors. Uniformity tends to permit a smoother introduction of new technology and may lower barriers to entry. For example, a service provider would want complete uniformity across the country in terms of technical features, nomenclature, rate structure, etc. Uniformity might benefit small firms in their competition with larger firms because of reduced R&D investment in developing a proprietary

technology and the greater ease of deploying services.

States could benefit from uniformity in circumstances where economic interests at times would pressure them to adopt rules to compete with other states for business investment in what could be referred to as a "race to the bottom."

The primary disadvantages of uniformity involve reduced freedom to innovate and experiment, and loss of flexibility and the ability to adapt to local conditions. A uniform system would not allow for adjustment to the various conditions found in different regions across the country, where there are differing local costs, conditions of demand, and states of network development. Nor would it allow for the differing policy priorities of the various states in this federal nation.

Another disadvantage to uniformity would be the loss of potentially valuable inter-RBOC rivalry and competition. Finally, many uniform systems suffer from the "lowest common denominator syndrome." A uniform system, like a convoy, often moves at speed of its slowest participant.

As I suggested in my testimony, the optimum system would be able to maintain the advantages of uniformity and combine them with the strengths of diversity. Such an optimal system would have a core of uniform elements, but would also have regional variations. Technical standards or standard nomenclature could be useful. However, the types of services offered beyond common building blocks should be subject to variation. Regional ONA plans should be able to reflect the priorities of state regulators and local users.

6. In March, Judge Greene decided to allow the Regional Bell Operating Companies (RBOCs) to provide transmission for informational services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be?

So far, the decision has apparently stimulated several of the RBOCs to submit plans for voice-mail or gateway services. These proposals are still pending at this time. Permitting the RBOCs to offer the limited range of services delineated in the decision might be in the long-run to the benefit of carriers, information providers, and end users.

RBOCs will gain experience with arranging sophisticated access for information providers (gateways), and with deploying new services (voice mail, protocol conversion, etc.). This experience may be a useful precursor to access arrangements and services that ONA will permit.

Senator INOUYE. Thank you very much, Mr. Noam.

Is time of the essence in the adoption of an ONA plan? Do we have the luxury of waiting a year, two years, three years?

Mr. NOAM. Immediacy is not of the essence but two or three years sounds too long to me. It seems to me that there is no chance that all issues could be resolved even within two or three years. Taking the proposals that exist, modifying them to conform to principles that should be set, and getting the process on the road would be preferable.

I agree with Assistant Secretary Sikes, that the issue is one of our international competitiveness. Other countries, including Europe, where a similar proceeding called Open Network Process is on the policy agenda, are not standing still.

Senator INOUYE. You have suggested a plan that calls for consultation, cooperation and recommendation. What if a state commission, like yours, refuses to adopt those recommendations?

Mr. NOAM. To the extent that this is within their lawful jurisdiction, it is the essence of the Federal system that they should have the ability to do so. It is true that in some instances this may slow down the process, but at the same time the states have been traditionally acting as a forum for experimentation with new regulatory techniques. ONA should not be an exception, and indeed, we are establishing ONA rules in New York State.

It is true that for a long time the states have been on different paths from the FCC but I think that the way state regulators have been going in recent years does not necessarily suggest that the differences will be imbridgeable in the future.

Senator INOUYE. How do you believe the ONA plan will affect residential ratepayers?

Mr. NOAM. It is essential to make sure that in the very complex allocation of costs and in the pricing, no burden will be imposed on the innocent bystanders. There clearly will be many residential users who will have very little use for ONA type services, at least for a number of years. Those people should not be called upon to subsidize the new services.

At the same time, in the longer term the greater and enhanced use of the network is likely to increase the revenue stream that is available. Therefore, the first years are the important ones to watch. The problem will not be a serious one in the future.

Senator INOUYE. Who should determine how the burden is distributed?

Mr. NOAM. The pricing, Mr. Chairman—where it concerns intrastate services, should be within the jurisdiction of the states. Different states have different regulatory philosophies as to sources of subsidy, pricing mechanisms, and pricing rules. There is room for substantial diversity here.

Senator INOUYE. You spoke of monopolies, how do you believe the new technologies and the greater intelligence that will be found in networks have an effect on monopolistic power? Will it enhance it or reduce it?

Mr. NOAM. There are two broad tendencies that conflict with each other. One is clearly that the greater capabilities and technology of the networks strengthen monopoly power. For example, the integrated services digital network (ISDN), or broad band networks, raise barriers to competitive entry and strengthen the economies of scale and therefore the position of existing carriers.

At the same time there is an even stronger counter trend which is what ONA stands for, namely a segmentation of markets and services among multiple suppliers, and a resultant greater pluralism and competition. The complex task for future regulation is how to reconcile those two forces, the enhancement of monopoly and the centrifugalism of pluralism.

Senator INOUYE. I gather that the commission has deregulated billing and collection services and yet these services appear very important to enhanced service providers. Do you believe that these services should be once again regulated?

Mr. NOAM. I think that the plans of the regional companies omit at least two things that I would think are important for the future health of the ESP industry. One is access, at least in the future, to the signaling channel and aninteraction of network processors, which make it possible to interconnect not only physically but also in terms of the intelligence of the network.

And the second omission is the billing system. Many of the ESPs may not be able to survive economically unless they have the ability to bill and to collect. Equal access to the billing mechanism is therefore something that should be considered and supported.

Senator INOUYE. I thank you very much, Mr. Noam. Your views have been most helpful to us.

Mr. NOAM. Thank you, Senator, for the opportunity to speak here today.

Senator INOUYE. Now, we have a panel consisting of Kenneth Millard, Senior Vice President, Corporate Strategy, Ameritech; Mr. Dale Hatfield of Hatfield Associates; Mr. Morrison Webb, Vice President, Government Relations of NYNEX; Mr. Phillip Walker, Vice President, Regulatory Counsel, Telenet Communications Corporation of Virginia and Mr. W. Robert Tirman, Manager of the Telecommunications Programs, Digital Equipment Corporation.

Gentlemen, I thank you all for appearing with us to assist us in this problem. May I first call upon Mr. Webb to make his presentation?

STATEMENTS OF MORRISON WEBB, VICE PRESIDENT, GOVERNMENT RELATIONS, NYNEX; KENNETH E. MILLARD, SENIOR VICE PRESIDENT, CORPORATE STRATEGY, AMERITECH; DALE HATFIELD, HATFIELD ASSOCIATES, INC.; PHILIP M. WALKER, VICE PRESIDENT, REGULATORY COUNSEL, TELENET COMMUNICATIONS CORP.; AND W. ROBERT TIRMAN, MANAGER, TELECOMMUNICATIONS PROGRAMS, DIGITAL EQUIPMENT CORP.

Mr. WEBB. Thank you, Senator.

My name is Toby Webb from NYNEX Corporation. My prefiled testimony describes in detail the ways in which NYNEX's ONA plan ensures non-discriminatory access for all enhanced service providers or ESPs, both from a technical and a pricing perspective.

There are three points that I would like to emphasize this morning. First, NYNEX's ONA plan is the result of an extensive joint effort with the information industry. We developed an excellent plan that can be implemented immediately and adapted in the future to new technologies and new marketplace needs.

Second, it is imperative that the ONA process proceed now. Approval of the ONA plans is merely the first step in bringing new information services from a broad variety of suppliers to the American public. The only way to take a first step is to take it. Unwarranted calls for delay will only put off the day when consumers will benefit from the information age that we all talk about.

Third, implementation now of our ONA plans is one way for NYNEX to demonstrate to the MFJ court in its next review of the information services restrictions that we can compete with ESPs on a nondiscriminatory basis. To elaborate on those: Over the past two years, we have worked diligently with ESPs to develop the basic service elements that we offer. We actively contributed to two national forums with the industry and then conducted two more of our own. We also met with smaller groups to focus on needs of the many distinct businesses which can be categorized as enhanced service providers. Not just the segments represented here today, but providers of data base services, video services, transaction services like credit cards or automated teller machines, alarm services, telephone answering services and voice messaging services.

We also established a marketing group to focus specifically on ESPs as a major market segment. We have interviewed hundreds of individual ESPs as part of this ongoing market outreach. Through this process we came to better understand the specific needs of these entrepreneurs, who use our network services to reach their customers, and the fact that meeting those needs will increase usage of our network.

Thus fulfilling our ONA obligations is not just a regulatory hoop for us to jump through so that we can offer enhanced services; it is also a major opportunity to increase our basic network business.

We were asked to list those services which we can make available to ESPs within one year. We have identified 19 new services which, coupled with 35 existing services, will satisfy many of the ESP service requests we received. We also lay out a process for implementing other service requests as they become feasible.

So NYNEX's plan is a productive response to the actual business needs of the hundreds of ESPs with whom we have met. In my prefiled testimony are quotations from several of them commending NYNEX's responsiveness to their needs. And our views of the principles underlying ONA turn out to be quite similar. 29 of the 50 parties who have commenting on ONA plans recently filed a joint motion with the FCC asking it to adopt 10 ONA principles building from the NTIA positions that Secretary Sikes mentioned earlier.

NYNEX supports these proposed guidelines with only minor modifications. Indeed most of them underlie the plan we have already filed. We therefore have urged the FCC to accept that joint motion for discussion as a further indication of our desire to work with the industry to implement ONA. The consistency between the principles raised by that joint motion from the ESPs and the principles inherent in our plan demonstrate that, as to NYNEX, there are no major policy issues to address before approving our plan and moving forward.

My second point is that the time to implement ONA is now. ONA will enable hundreds of entrepreneurs to use our network to reach their customers. It also will give us the opportunity to offer new services to a mass market of consumers.

In my written testimony are descriptions of two new services NYNEX is already planning: a gateway service that will give consumers with personal computers easy access to a variety of companies who offer electronic information services, and a voice messaging service which will give consumers the ability to receive, store and retrieve telephone messages using our network and a touchtone telephone. These we can begin under today's ground rules but ONA should proceed to let these beginnings grow.

Finally, the MFJ court will watch the progress we make in implementing ONA. In its recent triennial review, the court limited its removal of the information services restrictions on us in part because ONA, although announced at that time, had not been implemented and so could not be relied upon to protect ratepayers and competitors. The next triennial review will begin in only 18 months. We want the opportunity before then to demonstrate our ability to make ONA work.

Thank you.

Senator INOUYE. Thank you very much. Mr. Millard.

[The statement and questions and answers follow:]

STATEMENT OF MORRISON WEBB, VICE PRESIDENT, GOVERNMENT AFFAIRS, NYNEX CORPORATION

Good morning. My name is Morrison Webb and I represent NYNEX Corporation. NYNEX thanks the Subcommittee for allowing us to share or views on Information Services and Open Network Architecture ("ONA") with you today. What I would like to do is first provide some brief background material on ONA. Second, I will describe NYNEX's ONA Plan and in particular, show how or Plan ensures non-discriminatory access to all enhanced service providers ("ESPs"). Third, I will discuss how the NYNEX Plan has been well received by the industry. I will also show that as to NYNEX, there are no outstanding issues that the Federal Communications Commission must review before approving our Plan. Fourth, I will describe two new services which NYNEX will be offering to make information services available to the general public. Finally, I will describe the interrelationship between an approved ONA Plan and the possibility of further information services relief from the MFJ Court.

A. BACKGROUND

Under the Second Computer Inquiry, the FCC established a regime of "structural separations" and held that AT&T and the Bell Operating Companies ("BOCs") could offer enhanced services like voice messaging only through separate subsidiaries, "structurally separate" from their network operations. In the Third Computer Inquiry, however, the FCC determined that the costs of structural separations for enhanced services outweighed the benefits. The FCC held that "competition, technological innovation and improved service can best be served by the removal of structural separations." The FCC thus replaced structural separation for the enhanced services operations of AT&T and the BOCs with non-structural safeguards to protect ratepayers and competitors.

Under the FCC's Computer III *Phase I Order*, released June 16, 1986, if NYNEX wishes to provide, in the near term, a specific enhanced service on a structurally unseparated basis, it must provide comparably efficient interconnection ("CEI") to the underlying basic network for those competitors wishing to offer the same enhanced service. Such basic services must be available to other ESPs on the same terms and conditions.

In the longer term, to obtain general structural relief for the offering of enhanced services, the *Phase I Order* required AT&T and the BOCs (a) to file and receive approval of ONA plans that satisfy CEI and other requirements, (b) to file and receive approval of a Joint Cost Manual, and (c) to follow certain additional nonstructural safeguards pertaining to customer proprietary network information ("CPNI"), nondiscrimination and network information disclosure requirements.

Although AT&T and the BOCs can obtain complete structural relief for the offering of enhanced services by complying with the Commission's *Computer III* Orders, restrictions on the provision of "information services" in the Modification of Final Judgment ("MFJ") will nevertheless continue to apply to the BOCs.

The definition of an information service under the MFJ is quite similar to the FCC's definition of an enhanced service. Consequently, although NYNEX might be able to meet the FCC's requirements for offering a given enhanced service, that same service could be classified as an information service and therefore could not be offered under the MFJ. As the Senators are aware, the MFJ Court has recently afforded the BOCs some relief in providing information services. I will point out in a few minutes how further MFJ relief and ONA are closely related.

B. THE NYNEX ONA PLAN

Let me turn now to the ONA plan which NYNEX has developed in response to the FCC's request for a plan to provide ESPs access to basic network features in a nondiscriminatory and efficient manner. On February 1, 1988, the NYNEX Telephone Companies submitted their Open Network Architecture Plan to the FCC. Central to that plan is our realization that ONA is not merely a regulatory hoop to jump through if NYNEX is to be permitted to offer its own enhanced services to end users. We firmly believe that at the heart of ONA is an opportunity for NYNEX to provide ESPs and consumers a broad range of new services. These services will not only help ESP businesses grow, but will help us in increasing usage on our network. Put simply, in order to increase network usage, NYNEX must increase or expand the network-related products and services that its customers want to buy. ONA is a vehicle to accomplish that objective.

Therefore, in our ONA plan, we have shown how we will provide comparably efficient interconnection ("CEI") to our basic network services from both a technical and pricing perspective. Our customers, particularly enhanced service providers ("ESPs"), will be able to choose from an increased range of network features and options. In turn, ESPs can use our network functionality to offer sophisticated new services to their own customers.

Our commitment to ONA as a long term process thus is based on our belief that both the public and NYNEX will benefit from an ONA approach that ensures equality among all ESPs and thereby fosters both competition and the delivery of new services to the marketplace.

The FCC urged NYNEX and the other telephone companies to consult with ESPs and incorporate their needs into our Plans. Recognizing that such consultation would be essential to the development of a fair and complete ONA plan, NYNEX established a Market Outreach Process to the ESP industry, focused on identifying customer-perceived telecommunications needs and planning products that would meet those needs. We established a dedicated organization of full-time marketing and technical experts to directly interface with the various ESP industry segments.

A great variety of businesses can be categorized as "enhanced service providers," all with significantly different network needs in servicing their customers. They include:

Information Services—data content services provided by firms such as Quotron, Dun & Bradstreet, Mead Data ("Lexis" and "Nexis"), Dow Jones and the various members of the Information Industry Association and the American Newspaper Publishers Association.

Videotex services—interactive electronic databases with a mass market focus. Providers include CompuServe, The Source, Dialog, Trintex and other members of the Videotex Industry Association.

Value Added Networks—nationwide public data communications networks, provided by Telenet, Tymnet, CompuServe, IBM and others.

Transition Services—processing of financial transactions such as electronic funds transfers, and credit or debit card purchases. Providers include VISA, Mastercard, ADP and many banks.

Alarm and Telemetry Services—remote supervision of conditions at a customer's premises. Providers include ADT, Holmes and members of the Alarm Industry Communications Committee.

Telemessaging Services—personalized answering services provided by members of the Association of Telemessaging Services International, Inc., and various Telephone Answering Service trade association members.

Voice Messaging—computer based storage of voice messages. Providers include Centigram, Voice Gram Inc., Octel, VMX and others.

We used a variety of approaches in our outreach efforts to this many-faceted industry. We participated in two multi-Region forums on ONA and then ran two NYNEX-specific forums, or "ONA Dialogues," for ESPs, in which we presented NYNEX's developing plans on ONA. Over 100 members of the ESP industry attended each of these NYNEX forums. In order to get a better understanding of the business needs of the ESP customers, we also conducted industry segment breakout sessions at these Dialogues. In addition to these forums, we conducted approximately 300 interviews with ESP representatives to understand their network needs.

The NYNEX market outreach process and the new products and services it identified form the nucleus of NYNEX's ONA Plan. NYNEX has identified and is committed to offering 19 new products and services, designed specifically to meet the needs of the ESP industry, within one year of Plan approval. We also indentified 35 existing products and services which can be used to meet the requirements of our ESP customers. This collection of new and existing services, now targeted towards ESP needs, will facilitate the development of the information industry in this country.

We will deploy these new services based on market needs and technical feasibility. We have also established a process for reviewing ESP service requests on a continuing basis. We think it is particularly important that the NYNEX plan provides a forward-looking technical framework which accommodates not only today's technology but future technologies as well.

Thus, the NYNEX ONA Plan is our commitment to an ongoing process by which ESPs can request and secure an increased range of network features and options. The process will allow for the evolution of the network. Most important, the process is based on a very simple principle: all ESPs, including our own, will secure access to our basic network services on an equal basis—from both a technological and pricing perspective.

The Commission's CEI parameters were designed to ensure that the basic services available to a carrier's enhanced services are available to other ESPs on a comparably efficient basis. These parameters are at the heart of the ability of an ONA design to promote efficiency and competition. Consequently, if NYNEX does in fact provide an enhanced service, we will utilize the basic services which underlie such an enhanced service on the same terms and conditions applicable to all customers. NYNEX will carefully adhere to the Commission's CEI parameters, and will have no unfair advantage over potential competitors in the provision of enhanced services. Other parts of our ONA plan have been carefully designed to assure that no form of technical discrimination takes place.

NYNEX's commitment to equality is also apparent in the pricing of access to network functionalities. NYNEX has presented a pricing mechanism which establishes "price parity" between ESPs and NYNEX. The NYNEX proposal, simply put, would make the pricing arrangements for access, interoffice transport and usage identical for *all* ESPs, including NYNEX's enhanced services operations.

NYNEX's cost-based pricing policy and commitment to price parity will ensure equal treatment of all ESPs. NYNEX supports cost based pricing for both interstate and intrastate basic service elements. For existing services, NYNEX intends that existing tariffed prices apply. For new services, prices must be set low enough to stimulate market demand for enhanced services. Prices must ablso be set high enough to cover all costs, including the costs associated with the business risks of offering new ONA services, the demand for which is uncertain. Prices must also be set at a level which will enable ESPs to enjoy a reasonable expectation of price stability with which is to cultivate markets over an extended period of time.

C. NYNEX'S APPROACH TO ONA HAS BEEN WELL RECEIVED

Over fifty parties filed comments on the various ONA Plans in the FCC's ONA proceeding, including state and federal governmental bodies, industry associations, interexchange carriers, large users, manufacturers and enhanced services providers. NYNEX's commitment to the ONA process is recognized by many of them. Many of the commenters singled out NYNEX's efforts in their filed comments.[1] Indeed, even those parties who were generally critical of the BOCs' ONA Plans felt compelled to recognize NYNEX's Plan as the industry standard.

Some commenters did question aspects of the NYNEX plan. Many seem merely to be seeking clarification or additional assurance about the Plan. However, a second group appears to raise issues as part of a campaign to defer the entire ONA process. While delay might serve their own self interest, it will not benefit the industry as a whole or the national interest.

On June 22, 1988, 29 of these 50 commenting parties filed a joint motion with the FCC to adopt ten "ONA Principles" to guide the Commission in its review of the ONA Plans. After reviewing that filing, which is based in part on principles espoused by NTIA, NYNEX finds that it supports most of those proposed principles, with some minor modifications. Indeed, most of those principles underlie NYNEX's own ONA Plan. We therefore have asked the FCC to accept the Joint Motion, for discussion, as a further indication of our desire to promote cooperation within the industry in implementing ONA. The consistency between the issues raised by the Joint Motion and the principles inherent in the Plan we filed demonstrate that, as to NYNEX, there are simply no major policy issues which the Commission must address before approving our Plan.

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[1] *E.g.*, "NYNEX'[s] ONA Plan was judged *best.*" Warren Prince, Chairman, Tymnet—McDonnell Douglas Network Systems, Communications Daily, April 20, 1988.

"NYNEX's plan is far more responsive to the alarm industry's needs than are any of the other BOCs' plans." Alarm Industry Communications Committee (NYNEX) comments in the CC Docket No. 88-2 Phase I at 4.

"With the exception of the NYNEX Plan, ADT's specific ONA requests have largely been ignored." ADT Security Systems, Inc. comments in CC Docket No. 88-2 Phase I at 5.

"[NYNEX's] classification scheme is much more flexible than the other BOCs. This degree of flexibility has enabled NYNEX to achieve the unique status of being the benchmark." Alarm Industry Communications Committee (NYNEX) comments in CC Docket No. 88-2 Phase I at 22.

"Dun & Bradstreet believes that the Commission can best preserve its ONA goals by requiring the BOCs to adopt a tariff strategy similar to that proposed by NYNEX." Dun & Bradstreet Corporation comments in CC Docket No. 88-2 Phase I at 39.

D. NEW NYNEX SERVICES AND THE INTERRELATIONSHIP BETWEEN ONA AND FURTHER MFJ RELIEF

Prompt approval of our ONA Plan is important to the development of a broad Information Services marketplace.

As I pointed out at the outset, although the FCC's ONA process would be one step in offering BOC enhanced services to consumers, consumers still may not be able to receive these offerings because of the information services restrictions in the MFJ. The Court recently relaxed part of the information services restriction. This will enable NYNEX to provide information gateway transmission services and to enter storage and retrieval markets. However, the Court retained the restriction on BOC provision of services involving generating and manipulating information content.

In an effort to make information services available to the general public, NYNEX plans to offer several new services. NYNEX has developed and plans to introduce a "gateway" service that will give individuals with personal computers easy access to a variety of companies who offer electronic information services. Our objective with this service is to help create a mass market for information services by simplifying the process and reducing the expense of access by the ordinary consumer to a broad range of information databases. Use of the public network in this manner will expand the reach of existing electronic information services to many more people. In addition, if we make it easier for consumers to access information providers and sample their services, information providers will have additional incentives to develop and bring to the marketplace new and different information services.

Under the gateway concept, an individual with a personal computer and modem will have the ability to access the gateway (computer equipment located in a telephone company central office) by dialing a telephone number. Completion of this call establishes a direct connection between the gateway and the customer's PC. After verification that the customer is an authorized subscriber to the service, a directory of electronic information service providers is displayed. When the desired information provider is selected, the connection with the gateway is terminated and the call is forwarded to that provider—a process analogous to the transfer of a regular telephone call from one station to another. Once the session with the information provider is completed, that connection is dropped and connection with the gateway is reestablished. The customer can then select another provider from the directory display or terminate the call.

Subject to certain approvals by the FCC, NYNEX's gateway service will be trialed first in Burlington, Vermont this fall before public offerings begin in Boston and New York.

The introduction of NYNEX's gateway service in Vermont will provide the opportunity to test the network software developed by NYNEX's in-house research and development facility. This gateway service is targeted to residential users who are interested in easy access to a wide variety of services providing educational, public interest information and social opportunities in an inexpensive and friendly manner.

Vermont is an excellent trial location for our information service gateway. Within the Burlington area, our research has revealed that nearly one-third of the county residents has a personal computer at home. Further, and of significant importance, the Vermont Public Service Board is actively creating a regulatory climate that encourages the development and implementation of new and innovative services in the state.

We also found that Vermonters include information services as an important part of their future—especially for their children. Recently, the Vermont Educational Technology Study Committee was established representing educational institutions, the state legislature, and business. This Committee was formed to identify the skills Vermont children need now and for the future and to present a plan to meet those needs. The study group found a greater need for computers and related technology in the schools and for increased computer application to the learning process. At the top of the list of recommendations was a commitment to equal access to technology and information for all Vermont students. NYNEX's gateway service was obvious application for Vermont's students and can help to fill the needs identified by the Study Committee. In addition, the colleges and universities in Vermont are interested in using the gateway to link themselves together electronically to enhance the educational value of their curricula and increase educational opportunities for all their students.

The NYNEX Telephone companies also plan to offer Voice Messaging Services (VMS). VMS is an enhanced service which provides both business and residence customers with the ability to receive, store and retrieve telephone messages using the

telephone network and a Touch-Tone telephone. Two applications of VMS will be offered: Call Answering and Voice Mail. Call Answering provides the subscriber with the ability to have incoming calls answered when he is unable or does not wish to answer the phone, or when the line is busy. Calls are answered with either a revisable message in the subscriber's own voice or a "system"-provided announcement. After hearing the announcement, the calling party is given the opportunity to leave a message. When a message has been received by the VMS, the subscriber will receive a "message waiting" indication in the form of a stutter dial tone.

The subscriber activates the call answering capability by call forwarding his telephone line to a number that serves his voice messaging machine. Thereafter, incoming calls will be forwarded to VMS. Messages can be retrieved from the subscriber's own phone or if the subscriber is away, by calling the voice messaging machine from any Touch-Tone telephone and entering his pass code.

With Voice Mail, the subscriber can receive messages from another subscriber or from a non-subscriber. The caller would just need to know the subscriber's mailbox number in order to leave a message. The calling party calls the VMS directly and leaves a message for the subscriber. The message is retrieved in the same manner as for Call Answering. The difference between Call Answering and Voice Mail is that, in Call Answering, the caller intends to call the recipient directly, but is forwarded to the VMS. In Voice Mail, the caller calls the VMS directly with the intent of leaving a message without speaking directly to the recipient.

NYNEX has filed for FCC approval of its CEI plan for VMS services, which are planned for introduction in the fourth quarter of this year.

The Court's decision to allow NYNEX and the other BOCs into portions of the information services market has made new offerings possible under the MFJ and will facilitate bringing some aspects of the Information Age to the U.S. consumer. But we must go further if consumers are truly to realize the full benefits of the Information Age. The mass market for electronic information services has yet to be created in the United States. NYNEX and the other BOCs can be catalysts in bringing about easy access to these services. The potential range of benefits is enormous.

NYNEX is committed to the process of facilitating the spread of information services through use of the public network and to simplify and expand consumer access to the Information Age. Further relaxation of the MFJ information services constraints on the BOCs is needed in order to realize the full potential of the revolution in telecommunications and to ensure that all Americans can participate in an information rich society.

In recent statements, the MFJ Court has made it quite clear that future information service relief will depend upon the BOCs' response to this year's limited relaxation and the ability of the FCC to establish bona fide safeguards to ensure nondiscrimination. Clearly, the Court will be closely watching the ONA proceeding and implementation. ONA will affect the way the Court views future requests for information services relief.

NYNEX's enthusiastic implementation of ONA is a demonstration of our willingness to establish a level playing field. Ultimately, our approved Plan and its implementation can be used to demonstrate to the MFJ Court in the next Triennial Review in early 1990 that we are willing to compete on an equal footing and that the restrictions on information service provision should be loosened further.

E. CONCLUSION

The NYNEX ONA Plan demonstrates our commitment to the development of the ESP industry and provides the necessary safeguards to assure that, where we complete with ESPs, we will do so on an equal basis. Our ONA Plan will:

Stimulate the enhanced services industry in a manner that can make America the most information rich country in the world.

Enable NYNEX to participate in the limited set of information services that the MFJ Court has recently allowed.

Sever as a demonstration to the MFJ Court that NYNEX can and should be afforded greater relief from the current information service restrictions.

At this time, all that is necessary to take this initial step is FCC approval of the NYNEX ONA Plan. We are convinced that our Plan meets the FCC's ONA objectives and serves as the benchmark for the competitive provision of information services in America.

I would like to thank the Subcommittee for the chance to describe our commitment to ONA and the opportunity ONA offers for the full and their competitive provision of Information Age services in our country.

QUESTIONS OF SENATOR DANFORTH AND THE ANSWERS

Question. Why is Open Network Architecture (ONA) important?

Answer. ONA is important to the general public, the enhanced services industry and to NYNEX for a number of reasons. First and foremost, ONA is a major next step in the delivery of Information Age services to the America public. It is the centerpiece of the FCC's plan to speed up the efficient introduction of enhanced services over the telephone network, by allowing the regional telephone companies to offer such services while ensuring that competing suppliers of those services have comparable access to the network.

Introduction of new information, transmission, voice storage/retrieval and electronic mail services by NYNEX and the other Regional Bell Operating Companies (RBOCs) is presently dependent upon FCC approval of individual comparably efficient interconection (CEI) plans for a each new service. The process of CEI Plan approval is a cumbersome and time consuming one which may result in lengthy delay in the introduction of new RBOC services. After the plans are filed, they are put out for public notice, and a pleading cycle establishing dates for comments and reply comments is set. Once the pleading cycle is completed, there is no set time frame in which the FCC must render a decision to approve or reject the Plan. Until FCC approval is obtained, the service may not be introduced or marketed.

This process is intended to ensure that the FCC's comparably efficient interconnection principles are satisfied and that underlying basic services used by the RBOC in the provision of the new service are made available to all enhanced service providers (ESPs) under the same terms and conditions and in the same time-frame. NYNEX fully supports the intent of the process, as we have stated many times in the ONA proceedings.

ONA provides for CEI for all enhanced services. Therefore, approval of the ONA Plans would eliminate the need for ROBCs and FCC to engage in the time consuming CEI process for each new enhanced service the RBOCs plan to introduce.

Secondly for NYNEX, at the heart of ONA is an opportunity to provide ESPs and consumers a myriad of new services that all not only help ESP businesses develop, but will aid us in increasing usage on our network. In order to increase network usage, NYNEX must increase or expand the network-related products and services that its customers want to buy. ONA is one vehicle to accomplish that objective. (See response to Question No. 2).

Further, the Divestiture Court recently relaxed part of the MFJ information services restriction. This will enable NYNEX to provide information gateway transmission services and to enter the voice storage and retrieval markets. However, the Court retained the restriction on Bell Operating Company (BOC) provision of services involving generating and manipulating information content.

The Court's decision to allow NYNEX and the other BOCs into portions of the information services market will facilitate bringing the Information Age to the U.S. consumer. But we must go further if consumers are truly to realize the full benefits of the Information Age. The mass market for electronic information service has yet to be created in the United States. NYNEX and the other BOCs can be the catalysts in bringing about easy access to these services. The potential range of benefits is enormous. Examples of information services include: electronic homework hotline to aid children's learning; quality of life improvement through electronically automating time consuming chores (grocery and other shopping); improved communications and socialization (electronic mail and voice messaging); and providing information delivery (medical, news, community).

NYNEX is committed to the process of facilitating the spread of information services through use of the public network and to simplify and expand consumer access to the Information Age. Further relaxation of the MFJ information services constraints on the BOCs is needed in order to realize the full potential of the revolution in telecommunications and computer technology and to ensure that all Americans can participate in an information rich society.

In recent Opinions, the Divestiture Court has made it quite clear that future information service relief will depend upon the BOCs' response to the limited relaxation which has been granted and the ability of the FCC to establish bona fide safeguards to ensure nondiscrimination. Further information service relief at the conclusion of the second triennial review in 1990 will therefore be more likely if the FCC has approved and the BOCs have implemented ONA.

Implementation of ONA, which brings significant new products to market within the framework of nonstructural safeguards established by the FCC, is a demonstration of our willingness to compete fairly. Our approved Plan and its implementation can be used to demonstrate to the Divestiture Court that we are willing to compete

on an equal footing and that the restrictions on information service provision should be loosened further.

Finally, the development of a modern, feature-rich, public telecommunications network in some foreign countries serves as a model for United States action and poses a threat in the case of United States inaction. If United States information service industries are to remain competitive, policy makers must be mindful of the global threat to this industry and of the importance to the competitiveness of this industry of a modern, feature-rich public telecommunications network. Such a network can only be achieved in this country under a regulatory regime that encourages the timely and efficient delivery of new network products and services. As a part of ONA, NYNEX has committed to introduce 19 new network services by September of 1989. And this is just one step in the continual technological evolution of our network.

Japan has committed significant sums to develop a modern, feature-rich telecommunications network as an integral part of its effort to achieve worldwide leadership in the financial and information services industries. If Japan achieves its vision of the future, the result can be a staggering blow to the United States economy, with potential stagnation both in employment and in gross national product growth which are now contemplated for the rapidly expanding financial and information services industries. Therefore, development of a high quality, feature-rich network in this country is an important link in maintaining our international competitive position. ONA can help establish this feature-rich network.

Question. What is the rationale for changing from the regulatory requirement of separate subsidiaries to non-strucutural safeguards such as ONA?

Answer. Under the Second Computer Inquiry, the FCC established a regime of "structural separations" and held that AT&T and the BOCs could offer enhanced services (like voice messaging) only through structurally separate subsidiaries. Under this structural separation, the separate subsidiary is required to employ its own personnel and its own facilities for functions such as marketing, installation, maintenance and repair, and must keep separate books as well.

In the Third Computer Inquiry, however, the FCC determined that the costs of structural separations for enhanced services outweighed the benefits. Specifically, the perceived benefits from structural separations in protecting deregulated markets from the possibility of anticompetitive behavior and improper cost-shifting did not outweigh the costs imposed on the BOCs and their customers in terms of duplication of facilities and personnel, retarded innovation and lost efficiency.

The FCC has decided to replace structural separation for the enhanced services operations of AT&T and the BOCs with nonstructural safeguards such as accounting, network disclosure and CEI requirements. These nonstructural safeguards, embodied in our ONA Plan, will promote fair competition without the chilling effect on innovation and efficiency that structural separations had. ONA will increase the opportunity for the Information Age to emerge in this country in a rapid, efficient and innovative manner.

Question. Is it important to implement ONA now?

Answer. Yes. As pointed out in response to Question No. 1, ONA is important to the general public and NYNEX for three reasons: (1) The increased efficiency and innovation associated with ONA will give rise to a myriad of new services, (2) A spirited implementation of ONA is a way to demonstrate to the Divestiture Court that we can compete on an equal footing and that the restrictions on information service provision should be loosened further, and (3) ONA would stimulate the growth of both network and information services which would enable the United States to maintain our international competitive position. If ONA is deferred, not only will new basic network and information services be delivered in a less than timely fashion, the U.S. international competitive position will be jeopardized.

Question. How will customers in rural areas benefit from ONA?

Answer. All customers, including rural customers, will benefit from ONA implementation. To date, access to information services in rural America is neither widely available nor readily affordable. Approval and implementation of the NYNEX ONA Plan holds forth the promise to make such services available to the broadest segment of the American public.

ONA will enable ESPs to expand their use of the basic telephone network to reach customers and will give BOCs the opportunity to offer information services as presently allowed under the MFJ. BOC provision of information services, even to the limited extent allowed by the Divestiture Court, can be the catalyst the industry needs to expand the availability of information services to all consumers and to stimulate the development of innovative new services for the mass market.

An example of a new ONA service offering which has several applications for rural customers is videotex "gateway" service. NYNEX plans to introduce a videotex gateway service in Vermont in September. Gateway service gives individuals with personal computers easy access through the telephone network to a wide variety of information providers who offer electronic information services. In rural communities, gateway service will bring people and information together electronically where distance may otherwise limit their opportunities. For instance, schools in Vermont are interested in using the gateway to link themselves together electronically to enrich and expand the value of their educational programs and increase opportunities for all students.

In addition, rural customers will benefit from the financial benefits of ONA described in my answer to Question No. 7.

Question. What are the advantages and disadvantages of uniform ONA plans?

Answer. The issue is not whether there should be uniformity in the various ONA Plans, but rather, how much uniformity is appropriate. Uniform technical capabilities is a worthy goal that is shared by NYNEX. Specific mechanisms have been put in place to secure national technical uniformity. However, there are substantial barriers to establishing uniform ONA rates, term and conditions, as well as uniform tariffs and jurisdictional requirements. Antitrust laws, unique market demands in each Region, and the role of the state commissions in the ONA process call into question the utility, legality and practicability of uniformity in these areas.

NYNEX and the other BOCs support ONA technical uniformity. To further this goal, NYNEX has joined in a National ONA Committee established to deal with various technical uniformity issues. All the BOCs are represented on this committee. The efforts of this group led to the publishing of four special reports dealing with commonality of technical capabilities among their networks as well as the creation of the Information Industry Liaison Committee, an interindustry body to deal specifically with uniformity issues.

Having a standardized set of both technical capabilities and the names for particular services would result in ease of ordering and service introduction for nationwide customers of ONA services.

Another advantage of uniformity on technical issues is standardization of interfaces used to provide ONA services. This would include not only the physical Network Interface but also the functioning of the service features, no matter which type of central office switch the customer was connected to. We are working toward such technical uniformity.

There are, however, a number of disadvantages of total uniformity in BOC ONA plans. Differences between companies, including markets, local conditions and state regulation make absolute uniformity impossible and undesirable. Indeed, many of the ONA services are intrastate in nature. Federally mandating a standard set of services, tariffs, and prices would thus be inappropriate.

Mandating a standard set of services may reduce or eliminate the introduction of new services. Total uniformity will result in a "lowest common denominator" version of ONA. Innovation may be stifled or suffer significantly delayed introduction through an overly rigid definition of uniformity.

Finally, customers who need services that are localized or unique to a region or industry would suffer if the Commission required total uniformity of ONA services. Several of the NYNEX ONA offerings are geared to the customer needs of specific customer segments such as the banking industry. Customer needs that are as pressing in other areas of the country could be ignored under the banner of "national uniformity". NYNEX wants the flexibility to meet the communication requirements of all its customers regardless of whether customers in other regions have the same needs.

Question. In March, Judge Greene decided to allow the Regional Bell Operating Companies (RBOCs) to provide transmission for information services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be?

Answer. As a result of Judges Greene's decision, NYNEX and other RBOCs are developing and introducing new services intended to make information services available to the general public. For example, as I discussed in my testimony, NYNEX plans to introduce videotex "gateway" service and Voice Messaging Services by fourth quarter 1988 or first quarter 1989. The videotex "gateway" service will give individuals with personal computers easy access, over the public switched network, to a variety of companies offering electronic information services. This service makes it easier for customers to sample information providers' services, creating additional incentives for those information providers to bring new and different services to the marketplace. The Voice Messaging Services, Call Answering and

Voice Mail, will allow both business and residence subscribers to receive, store, and retrieve telephone messages using only the telephone network and a Touch-Tone telephone. Indeed, NYNEX has already filed a CEI Plan with the FCC for permission to provide Voice Messaging Services. These new services, and others which may be planned and developed by NYNEX in the future, will allow easy access to electronic information services, bringing many of the benefits of the Information Age to the general public.

Thus far, many RBOCs have filed CEI Plans for some form of videotex gateway service and voice messaging services. Some have also filed Plans for electronic mail. Few of those Plans have yet been approved. Consequently, few RBOC enhanced services are currently available to the public.

Approval of the ONA Plans would serve to expedite the introduction of the services Judge Greene has allowed the RBOCs to offer, and would ensure that the benefits of these services are brought to the U.S. consumer without the delays inherent in the current CEI process.

Question. You state in your testimony that NYNEX and the public will benefit from a fair and equitable ONA plan that promotes increased use of the NYNEX network. What advantages will the public derive from increased use of the network?

Answer. Increased usage of the public network results in increased revenues which may be used to meet the telephone company's business obligations such as recovering the costs associated with the network or investing in network modernization. The public will benefit, since the additional revenues generated through network stimulation will reduce the need for the telephone companies to generate these revenues through increases in rates for other services, including basic exchange services. As total revenues derived from increased usage of existing network facilities increase, upward pressure on basic exchange rates decreases. Thus, the benefit to the public increases with the usage of the network.

Question. How does your company plan to reach low-income telephone customers to ensure that they have an opportunity to participate in the information age?

Answer. Implementation of NYNEX's ONA Plan and BOC entry into the information services industry are the stimuli needed to create a mass market for information services. By encouraging network usage by many ESPs, ONA services will be more affordable for individual ESPs, and these "public network economies" can be passed on to the ESPs' customers.

Low income telephone subscribers will be a part of this mass market, with all consumers having the opportunity to choose from an increased range of information services, all of which will be made available as optional services through the use of the telephone network. NYNEX is committed to ensuring that access to the basic telephone network continues to be available at affordable rates to all customers. In keeping with this commitment, NYNEX has implemented programs such as Lifeline and Link Up America that are designed to provide low income subscribers with discounts for their local telephone service.

By expanding the use of the basic telephone network for ESPs through ONA, while working to keep access to that network affordable for all customers, NYNEX's ONA Plan provides an important step in the evolution of the telecommunications society now emerging.

Question. How does your company's ONA plan differ from other ONA plans?

Answer. As I pointed out in my testimony, NYNEX's commitment to the ONA process has been recognized by numerous parties from all parts of the industry who participated in the ONA proceedings. NYNEX's market outreach process and resulting products and services have been extremely well received by the industry. Indeed, NYNEX was repeatedly singled out as being the most responsive of all the regions in meeting the unique needs of the enhanced services industry. Even those parties who were generally critical of the BOCs' ONA Plans felt compelled to recognize NYNEX's Plan as the industry standard.

On June 22, 1988, 29 of the 50 commenting parties in the ONA parties filed a joint motion with the FCC to adopt ten "ONA Principles" to guide the Commission in its review of the ONA Plan. NYNEX was alone among the Regions in formally supporting these principles. The consistency between the principles noted by the Joint Parties and the principles inherent in our Plan demonstrate that as to NYNEX, there are simply no major policy issues which the Commission must address before approving our Plan. This is a primary difference between the NYNEX ONA Plan and the plans submitted by the other BOCs.

NYNEX's ONA Plan differs in varying degrees from the other ONA Plans in three specific areas. NYNEX offers all existing services under the ONA umbrella. Some ONA plans limit the scope of their offering to a subset of what is offered today or attempt to restrict which customers can purchase the service. NYNEX

views all the services that the network offers today and in the future as being a part of ONA. This comprehensive approach to ONA assures that the entire network will evolve in an open and responsive manner.

The price parity proposal in the NYNEX ONA Plan assures all enhanced service providers that the full range of basic services will be utilized by NYNEX on the same terms and conditions as all competitors. Some ONA plans offer limited price parity or distance sensitive pricing plans that only apply to a limited set of service offerings. A limited pricing plan unduly restricts the evolution of the network to a fixed set of services that is under the control of the telephone company. The NYNEX approach opens the network to innovative enhanced service providers with the assurance that all can compete fairly.

The NYNEX ONA Plan proposes that existing tariffing principles and procedures be applied to all ONA services. ONA services should be tariffed no differently from any other services. Consequently, NYNEX will tariff ONA services in the appropriate jurisdiction, with intrastate services tariffed in the state jurisdiction and interstate services tariffed in the federal jurisdiction. Other ONA plans propose new tariffs in federal or state jurisdictions, user restricted tariffs or tariffs for only basic service elements. The NYNEX tariffing approach assures that all network users will be treated in a nondiscriminatory manner.

Mr. MILLARD. Good morning, Mr. Chairman, and thank you for the opportunity to address this Committee.

I work for Ameritech and I am here this morning to explain why we believe we should get on with this business of ONA. Ameritech is prepared to make ONA available to 9 million lines by September of 1989, convert 370 of its central offices in six major metropolitan areas, eight secondary cities and five rural cities and roll out the rest of our facilities soon thereafter.

I would like to underline at the very beginning that we believe open network architecture is a matter intimately connected with the strength of our national economy and the ability of our country to compete in world markets. This issue needs to be dealt with at that level.

The telephone network is one of the most critical elements of the nation's infrastructure, every bit as important to the American economy and the American way of life as bridges, highways and airports.

We are faced with the challenge of making this public network grow from its present role of voice message delivery to one of providing new and innovative information services. Information services are made possible by new technologies, many of which were developed in this country. Such services are already offered in France, Japan and other countries. In the United States, however, they are not widely available to nearly all residential and most small business customers because they are not deliverable through our public networks, the only cost effective and efficient way to do it.

In fact, with respect to the widespread delivery of the benefits of the new telecommunication technologies, we believe the United States already is a second tier country. If we would regain our preeminence in the world economy, we must do it in the coin of the global marketplace, timely information. That requires a state-of-the-art public communications network, one that allows all people, personal computers, telephones, other machines alike, to communicate.

Despite the urgency of moving ahead in the delivery of information services, and Ameritech believes it to be urgent, there is controversy as to how it should be done. Today I would like to briefly summarize the issues and to suggest a rational solution fair to all parties and certainly within reach.

In 1934, Congress created the Federal Communications Commission and charged it with ensuring reliable, widely available and reasonably priced telephone service. Today, Congress's goal has largely been met with respect to voice telephone services. It is important to realize that the achievement of this goal was made possible by subsidies. Pricing policies were adopted which allowed low rates for basic local service, even where those rates did not cover underlying costs. Many of these same pricing policies in a fiercely competitive environment are still in effect today.

Now that the Greene court has withdrawn some of its prohibitions on participation in information services by the Bell companies, it remains for the FCC to set the ground rules. It has done so by introducing an open network architecture as a policy tool with three primary objectives: Encourage the provision of these information services by making it easy for information providers to use our public networks; to allow the Bell companies to provide information services as well; and to ensure fair competition between the two groups.

ONA addresses these goals by requiring that certain functional building blocks necessary to the provision of information services be identified and provided to the information service providers and that the information service providers other than the Bell companies have access to these building blocks in an efficient and cost effective way.

And of course the FCC, during this process, must ensure that allowing access to these network service elements by other suppliers of information services will not have a negative impact on the rates or services for other users of ordinary telephone services.

The Bell companies filed their various plans in February of this year. The content of these plans are the source of the current debate. The debate really arises in two areas. First, some have tried to use the ONA process to position themselves to compete in the local exchange business. Rather than buying the unbundled products of our factory one at a time to make information services possible, they would have us lease the machines in the factory so they can compete with our factory on more favorable terms than we ourselves enjoy.

Ameritech is not opposed to local exchange competition and is willing to deal with that issue in any appropriate forum. We do not believe ONA, as the FCC has defined it, to be that forum.

Second, others want to use the ONA process for the rather straightforward purpose of lowering their telephone bill. They would selectively use the ONA process to inflate their opportunities in the information service market. These parties typically favor cost-based pricing of network elements where it lowers their telephone bill, but argue against cost-based pricing for network elements where it has the opposite effect of increasing their telephone bill.

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Now despite these understandably self-serving positions, we believe consensus is possible which sets aside these less responsible positions. I am optimistic that a rational, effective, fair approach to ONA can be hammered out. We have three suggestions.

First a middle ground of local network disaggregation is appropriate that on the one hand provides access for information providers, but on the other hand maintains the Commission's obligation to ensure reasonably priced local exchange service.

Second, ONA should not require the reconfiguring or repricing of other services that customers currently enjoy or that are useful in applications unrelated to information services.

And thirdly, we have always championed that ONA services be provided with as much nationwide uniformity as is practical.

Fourth, we think ONA should provide a rational pricing platform for the development of information services, unaffected, to the extent possible, by our existing subsidy mechanism.

And finally, ONA pricing, as is existing telephone company pricing, should be the responsibility of each appropriate regulatory agency.

We have submitted an ONA proposal that supports the FCC goals of increasing efficiency and innovation in this vital communications infrastructure and provides for fair entry by competitive suppliers while retaining existing rates and services at their current excellent levels.

Our proposal has been well-received by most information service providers as well as all of the state regulators in the area that we serve. I am more than a little bit surprised that some parties to the ONA proceeding have urged rejection of all ONA proposals including ours. This is especially ironic because we believe we have met the so-called ten principles recently offered to advance and expedite the ONA process.

Let me conclude by emphasizing our view that the FCC is very much on track with ONA. There is no need to start the process over as many have suggested, and waste another year or two. After all, information services or enhanced services as they are also known has now barely survived four or five different regulatory regimes and the services have not yet arrived. The fact that they are arriving very late in this country may have something to do with the four or five regulatory regimes that we have already gone through. In fact, we believe that further delay on this latest attempt to reach a regulatory process would be a grave policy error.

It is important to this country and to its people that we get on with ONA. Failure to do so will leave us with a public network that continues to lag behind the networks of other countries and the economy that depends on that infrastructure will continue to be severely disadvantaged by the absence of information services.

That, Mr. Chairman, is what we believe the largest risk related to the ONA issue to be, and one that we believe we cannot afford to take.

Senator INOUYE. Thank you very much, Mr. Millard.

[The statement and questions and answers follow:]

STATEMENT OF KENNETH E. MILLARD, SENIOR VICE PRESIDENT, CORPORATE STRATEGY, AMERITECH

100 years ago the telephone was a novel curiosity.

Today, the telephone network is a critical element of this nation's infrastructure—every bit as important as bridges, highways and airports. It is a fundamental underpinning of the American economy and our way of life.

The challenge before us is to allow this public network to grow from its present role of voice message exchange to one of providing new and innovative information services. These services, made possible by new technology developed in this country, are already being offered in France and Japan, but not to any great extent in the United States. The further challenge is to deliver these services in a way that maintains the excellence of our existing network services. The Federal Communications Commission (FCC) has developed the concept of Open Network Architecture (ONA) to accomplish these goals. ONA is a policy tool to allow the public network to be the transporter of these new services. Under ONA, the Bell Operating Companies and other information service vendors would have comparably efficient access to the public network to bring the benefits of these services to the American public.

The benefits from implementing ONA will be substantial. ONA and information services can create new businesses and jobs, and can improve U.S. productivity and the global competitiveness of our country's businesses. It can also support a higher general quality of life in America.

With the benefits of ONA and information services being so clear, why is there controversy? To address that question, a few comments on public policy relative to the regulation of the public network are required.

BACKGROUND

In 1934, Congress enacted the Communications Act. By this Act, the Federal Communications Commission was created with the express intent of making available "to all people of the United States a rapid, efficient, nation-wide and world-wide . . . communication service with adequate facilities at reasonable charges."

In the last 50 years, we have seen Congress' goal of universal, high-quality telephone service come to pass. The achievement of this goal was made possible by policies encouraging affordable rates for basic local exchange service—even where those rates did not cover underlying costs. The subsidies for basic local services encouraged by these policies are largely intact today.

The FCC is now addressing the new challenge: how to effectively utilize the nation's public communications network infrastructure in a way that supports the emerging information needs of all users while maintaining efficient, universal basic services. The FCC, in its Third Computer Inquiry, conceived Open Network Architecture as a way to meet this challenge.

ONA recognizes that two things are necessary to provide for the widespread availability of innovative technologies and services. First, the Bell companies must be permitted to provide information services through their basic network facilities. To achieve the efficiencies that such integrated offerings may bring to consumers, only such restrictions should be imposed on the Bell companies in the information services marketplace as are necessary to protect ratepayers and promote competition in the provision of information services. Second, the information services operations of the carriers and their competitors must be able to interconnect to specific basic network functions and interfaces—functional building blocks, known as Basic Service Elements, that can underlie information services—on an unbundled and equal basis.

The FCC believes that this approach will increase the public welfare by maximizing the availability of innovative information services.

STATUS

The Bell companies filed their proposals for meeting the FCC's ONA requirements on February 1 of this year. Since that time, a debate has ensued.

Some parties argue that the ONA plans as filed do not go far enough. Their principal criticisms take two forms.

First, they assert that the Bell companies have not sufficiently broken apart the various components of their local exchange networks. Second, they complain that the Bell companies have not agreed to the cost-based pricing of each and every component of the public switched network that information service providers might conceivably use in conjunction with their offerings. These criticisms, however, are unreasonable.

Some parties who seek additional fragmentation of the public network do so to further their goal of engaging in competition in basic exchange services. They ask the FCC to require the Bell companies to sell them only those portions of the network that are supported by subsidies, at the below-cost, subsidized price. They would forgo the purchase of--and indeed, would provide alternatives to—those network components that provide the subsidy.

ONA clearly is not the forum in which to address the issue of local exchange competition. ONA's focus is on the provision of information services. Thus, these parties' arguments that the ONA plans are defective must be rejected. Nevertheless, this Subcommittee should recognize how these parties attempt to use ONA to take advantage of prices designed to encourage universal service, without providing any contribution in support of universal service.

Other parties who seek additional fragmentation of the public network do wish to provide information services. However, they too wish to acquire only subsidized network components. And, their assertion that they must be allowed to purchase existing subsidy-providing exchange services at new cost-based rates demonstrates the lengths to which they will go to avoid contributions in support of universal service. Ameritech believes that the unbundling of the local exchange network must be done in a way that balances the need to encourage the deployment of new and innovative services with the goal of universal service. The persistence of pricing structures under which some network components are subsidized by others makes simple network fragmentation unworkable.

WHAT TO DO?

A rational approach to ONA can be found. Ameritech submits that the FCC should proceed with its implementation of ONA, and adopt a framework along the following lines:

Network functionalities do need to be provided on a disaggregated basis. But the network should not be carelessly splintered into its ultimate components. The FCC's ONA goal of promoting innovative information services is best advanced by unbundling the switching functionality useful to information service providers and providing that functionality in conjunction with rationally priced access and transport mechanisms.

ONA should not require any reconfiguring or repricing of services and capabilities that would not be purchased directly by information service providers, or that are useful in many applications unrelated to information services. To do so would result in a minority of users dictating the treatment and pricing of services of benefit to a majority of other users.

ONA services should be offered with as much national uniformity as is practicable. This will help drive the development of a national communications-based information infrastructure. However, uniformity enforced by regulation can be counter-productive—stunting, rather than encouraging innovation. The appropriate level of uniformity should be determined in the private sector.

ONA should provide a rational pricing platform for the development of information services.

ONA should preserve the ability of each regulatory jurisdiction to exercise its judgment with respect to the pricing issues for which it is responsible.

Finally, ONA should encourage competition.

Ameritech has provided the FCC with a proposal that clearly supports the FCC's ONA goal of increasing efficiency and innovation in this country's vital communications infrastructure. Some industry participants, however, expanding on a position expressed by the NTIA, have petitioned the FCC to reject each and every ONA plan—including Ameritech's. These parties have presented the FCC with a list of general principles that they say will "advance and expedite" the ONA process. Ironically, the Ameritech proposal already addresses—and we believe meets the requirements of—those principles.

It provides network unbundling sufficient to support emerging information services, while fostering universal service. [Principle 1.?

It allows the FCC to exercise its jurisdiction over interstate services, while allowing the states to exercise jurisdiction over purely intrastate services. [Principle 2.]

It provides that interstate Basic Service Elements will be offered through federal tariffs, at just and reasonable cost-based rates. [Principle 3.]

It does not result in rate increases for existing services or provide for the elimination of existing service options. [Principle 4.]

All functions that can properly be deemed a Basic Service Element are provided on an unbundled, tariffed basis. Related non-tariffed services will be provided in a nondiscriminatory fashion. [Principle 5.]

It provides detailed technical information for Basic Service Elements. [Principle 6.]

It supports national uniformity in the ONA process, but seeks to achieve such uniformity in the private sector. [Principle 7.]

It provides full explanations where requests for Basic Service Elements are not met, and commits to do so within a definite time period for future requests. [Principle 8.]

It invites continued monitoring of the ONA process by the FCC. [Principle 9.]

It reflects a clear commitment to the provision of ubiquitous nondiscriminatory access to the component elements that are utilized by the Ameritech Operating Companies in providing their own information services. [Principle 10.]

Finally, the Ameritech plan supports the addressing of technical standardization and other considerations in existing neutral inter-industry bodies such as the T1 Committee and the Information Industry Liaison Committee.

CONCLUDING POINTS

Ameritech is firmly committed to making ONA and all of its benefits a reality.

Our intent is to have existing businesses, including ours, and new businesses bring Information Age services and benefits to the American public.

It is our view that the more companies compete in the marketplace, the greater will be the benefit to consumers. We also believe that a vigorous information provider industry will benefit our network-based business.

In discussions with information service providers, we have been told that our plan not only is the best of those submitted, but also the one that provides them with a real opportunity to succeed. In the publicly filed comments on the ONA plans, the Ameritech Plan is given much credit for its fair minded approach to pricing as well as other important features.

Most state regulatory commissions in the Ameritech region have generally been supportive. This is critical because without this state regulatory support, there can be no ONA.

It is Ameritech's position that the FCC is on the right track with ONA. There is no need to start the process over, and waste a year or two, as some have suggested.

The Ameritech plan represents a good faith effort at a positive beginning for ONA. As emerging markets indicate needs for new initiatives, Ameritech will accommodate these market needs.

It is important to this country and its people that we get on with ONA. Failure to do so will leave us with a public network that is second rate by world standards. That is by far the largest risk in ONA, and it is the risk no one can afford to take.

AMERITECH
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August 5, 1988

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I am writing in reply to your letter of July 22, 1988 in which you posed several questions relative to Open network Architecture - ONA, on behalf of Senator Danforth.

Your questions are repeated below followed by my answers.

Q. Why is Open Network Architecture (ONA) important?

A. ONA is important for at least four very fundamental reasons:

- It will facilitate the creation and delivery of new and innovative information age services to the American people. These services will support a higher general quality of life in this country.

- It will stimulate the formation of new businesses and new jobs.

- It will improve the productivity of existing American businesses and this country's global competitiveness.

- It will help insure that America's fundamental information infrastructure, the public switched network, does not become a second rate network by world standards.

Q. What is the rationale for changing from the regulatory requirement of separate subsidiaries to non-structural safeguards such as ONA?

A. The rational is that it is in the public interest to do so. Allowing carriers to offer information services without requiring structural separation will facilitate the benefits discussed in response to question one above. This change can be made while assuring no unfair advantage to any marketplace participant.

Q. Is it important to implement ONA now?

A. ONA should be implemented soon. Every day of delay is another day that benefits are not realized. Potential participants in the information age cannot develop business plans nor make investments until the conditions that will exist in the marketplace are known.

Q. How will customers in rural areas benefit from ONA?

A. Many information services derived from ONA will be available to anyone over the public switched network - rural and urban alike. For those services that will be mainly local in nature, the Ameritech ONA plan, unlike others, has specifically identified thirteen mid-sized cities and rural areas where the most modern technology will be made available for ONA services. They will provide excellent marketing test beds, and success in these markets will encourage information service providers to actively pursue customers there. The Ameritech plan includes over 9 million of our 15.2 million access lines the first day ONA is implemented.

Q. What are the advantages and disadvantages of uniform ONA plans?

A. As the question implies there are both advantages and disadvantages to uniformity. Some basic level of uniformity is required for markets to grow. Technical uniformity for otherwise identical services, for example, is a must. It is Ameritech's position that the marketplace should decide which technical requirements work best for each service - this is not something that should be mandated by regulation.

Uniformity in the way services are tariffed across the country would be of enormous benefit to information service providers, and they have asked for this. One of the reasons Ameritech selected federal and state access tariffs for ONA is because of their uniformity. Unfortunately, few RBOCs have elected to use access tariffs for ONA.

Specific ONA offerings on the other hand, and pricing, should reflect local and regional markets and cost structures. These should not be nationally uniform.

Q. In March, Judge Greene decided to allow the Regional Bell Operating Companies (RBOCs) to provide transmission for information services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be?

A. While Judge Green's decision does allow the transport of information services, as well as voice storage and retrieval, it does not allow the Bell companies to create information content. This prohibition remains as a major barrier to the full participation of the Bell companies in meeting their customers' information services needs, and no doubt will slow the growth of these services in this country.

Beyond this the effect of this decision has varied by Regional Bell Holding Company, and this is to be expected as they all have their own corporate strategies and market plans. But in general, the effect has been to prompt the regions to begin limited participation in service offerings and market trials. These come in the form of Bell offered services, and partnerships and alliances with other businesses. All regions have stated that they intend to pursue the benefits of this limited decision to the fullest.

As to future effects, the marketplace will have the greatest voice in determining that.

Q. How does your company plan to reach low-income telephone customers to ensure that they have an opportunity to participate in the information age?

A. The two most basic actions Ameritech can take to insure that low income Americans benefit from information age services is to insure they have network access to these services, and that the prices for the services are affordable.

On the issue of network access, our Bell Companies all have some form of low income network access plan. They vary from state to state as state regulators have seen fit, but in all jurisdictions basic network access is available at very low cost and in fact is heavily subsidized. Basic residential access in Chicago is available for as little as $7.13 per month.

As to the pricing of ONA services, Ameritech has committed to providing ONA services to information service providers on a cost basis. Other plans publicly state they plan to charge whatever the market will bear, or, if they claim cost based pricing, they intend to include such things as "risk premiums". Ameritech's pricing plan contains no fine print - it will be cost based.

These two actions, we believe, are demonstrated commitments to insure services are as widely available as possible.

Q. How does your company's ONA plan differ from other ONA plans?

A. As the answer to the above questions have already indicated, the Ameritech plan does differ from other ONA plans. We can show that every point of difference is to the direct benefit of information service providers and consumers:

- we will cost base price ONA services.

- we will tariff ONA services in access tariffs, both federal and state, thereby preserving the jurisdictional balance between regulatory bodies and encouraging uniformity.

- we intend the initial offering of services to cover over nine million of our 15.2 million access lines, including mid-sized cities and rural areas.

- we are committed to non-discrimination in the treatment of all information service providers.

As the testimony of the other witnesses before the Sub-Committee on July 14th indicated, even the strongest critics of ONA plans agree that these features of the Ameritech plan are most desirable.

The above concludes my response to your questions. I hope this information meets your needs and those of Senator Danforth. However, this response does not have to conclude our dialogue on ONA. Please feel free to correspond or call me and I'd be happy to discuss ONA or Ameritech's plan at greater length.

Sincerely,

R. Williard

Senator INOUYE. Mr. Hatfield

Mr. HATFIELD. Thank you very much, Mr. Chairman, I appreciate the opportunity to be here on this panel.

What I would like to do is make a couple of comments that are drawn from my prefiled testimony and then react to a couple of things that I have heard here this morning, if that would be all right.

Senator INOUYE. Fine, sir.

Mr. HATFIELD. First, I certainly agree with the comments that have been made regarding the importance of the information sector of the economy. I do not think I can add anything more to that.

A second thing that I think is important to realize is that, because of the Bell Operating Companies' developments in the fiber optic area and so forth, their monopoly in the future may actually increase rather than decrease. So the difficulties that we face may well be increasing in the future.

Thirdly, the loosening of the MFJ restrictions by Judge Greene actually increases the stakes dramatically. Before, the impact was small because the sector of the information economy that would be affected was small. Now it is becoming much larger. And those two things together, it seems to me, really point to the importance of the situation that we are in today.

Another point that I would like to make, a point that at times is almost glossed over, it seems to me is that there is a very fundamental change in policy that we are contemplating here. We are removing a wall or a separation that has been in place for quite sometime. What we are talking about here is a fundamental change to behavioral type restrictions and that is just not to be taken lightly, that is really a fundamental change. I would underscore the fact that once that change is made and the information services and the basic sort of services are comingled, I would make two points:

(1) It is very difficult at that point to correct the situation if you have made a mistake; it really is a major problem of trying to correct the situation if you have done something wrong, and then

(2) Once the BOCs are relieved of the responsibilities, or the requirement for separate subsidiaries, the incentives in this process once they are able to comingle, it seems to me, change rather dramatically. So if we are going to ensure cooperation, a cooperative process later on, it seems that now is the time to ensure that.

The other thing I would disagree with here a little bit this morning is about holding up things. I think it is important to realize that the FCC does have the comparably efficient interconnection process whereby certain services can move forward. There is that sort of valve, if you will, if it is an important service and needs to move forward. So things need not stop if at this point we wanted to make sure that things are correct before we move forward.

If I could then comment on a couple of specific things that I heard specifically that troubled me. One Dr. Brock mentioned that the BOCs have an incentive to offer certain BSEs because they will need them to provide their own services. Well the problem with that is that there

may be certain services that the BOCs are still prohibited from providing and therefore if somebody wants a particular BSE that would help them offer that service, and the BOCs have some notion in the future that they might also be able to offer it, it seems to me that there is an incentive there for the BOCs to try to slow that up because hopefully if you slow your competitor up, by the time they are able to do it, you would be better able to.

The other thing is maybe the BOC has just lagged behind and somebody has come in with a very good idea and the BOCs are not quite ready, they have not done their development and so forth. So it seems to me there is an incentive there to say "We do not understand what you want," "It is going to take a-long time," "It is technically infeasible," "We have to study it," "It is going to cost a lot." The BOCs could go through a whole litany of reasons while meanwhile they are developing their responsive technology.

So that is one concern and it seems like saying that they will need these BSEs for their end services does not look at the complete picture.

Another comment was regarding state regulation. And let me say at the outset that I am very much a states rights person, but I do believe in federalism as well. But I have been around the industry long enough to remember CPE, customer premise equipment or terminal equipment issues, and what a difficult thing that was to try and get a national policy. So I hear what is being said and I hope it is true, but I personally am very concerned that we could really hurt ourselves if we end up with 51 different jurisdictions taking different positions. It would be like I had my electric shaver with an plus and I went from state to state and I could not plug it into an outlet. We could end up with the same situation here, so I am very, very concerned and not quite as sanguine as some of the other people here regarding how well that process will work.

I would like finally to just reiterate, I think Eli Noam's comment about the need for some sort of dispute resolution and the need for the regulators to keep involved. It seems to me that you cannot just allow this to be a voluntary industry effort. It would be like sitting down to play poker when somebody else at the table has already been dealt four aces. In this case, it is the fact that they control the monopoly loop.

So when you are sitting down to negotiations, you are sitting down in a situation where you do not have the negotiating power. It is naive to say this is another process whereby companies who do not have power can and sit down and negotiate their differences. In this situation, it seems to me one party is holding all the aces.

I personally would not like to see detailed government involvement. Here again, I feel that it may be a little bit naive and we must not allow companies to make unilateral decisions based on their monopoly power, but instead we must make them justify 3it if they take actions which would hold back genuine requirements or requests for access to their basic service elements.

I think probably I have touched on the major points that I wanted to react to this morning. Thank you, Mr. Chairman.

Senator INOUYE. I thank you, Mr. Hatfield.

[The statement and questions and answers follow:]

STATEMENT OF DALE N. HATFIELD, HATFIELD ASSOCIATES

Thank you Mr. Chairman.

It is a privilege to be here to testify before this subcommittee on the subject of Open Network Architecturei (ONA). My name is Dale Hatfield and I am President of a small consulting firm located in Boulder, Colorado. I am also an Adjunct Professor at the University of Colorado, Director of the Telecommunications Division of the University College of the University of Denver, and a Fellow of the Annenberg Washington Program here in Washington. I have been involved in various aspects of telecommunications policy for over fifteen years, within the federal government, in academia and in the private sector. My last position in government was that of Deputy Assistant Secretary of Commerce for Communications and Information.

Earlier this year, my consulting firm was retained by a number of firms in the computer and communications fields to conduct an extensive study of the Open Network Architecture Plans filed by the Bell Operating Companies with the Federal Communications Commission in February of this year. Those organizations who sponsored our study included, in alphabetical order, ADAPSO, Computer and Business Equipment Manufacturers Association, Compuserve Corporation, Dun & Bradstreet, Independent Data Communications Manufacturers Association, Inc., and Telenet Communications Corporation. Our study, which was conducted by my colleague, Dr. Robert Mercer, and myself, was released in early April. I would be happy to submit our full study for the record if the subcommittee so desires. My testimony here this morning will draw heavily upon our study, but I would like to emphasize that I am testifying here today on my own behalf, and not on behalf of those clients.

I would like to divide the balance of my testimony into four parts. First, I would like to briefly review the procedural situation as it currently exists at the Federal Communications Commission. Second, I would like to provide a commentary on the importance of the ONA proceeding. Third, I would like to describe, in summary fashion, the serious problems that we uncovered in our study of the ONA plans as submitted by the BOCs. Finally, I would like to comment briefly on our recommendations for correcting those deficiencies.

Procedural Situation at the Federal Communications Commission

As this Subcommittee is well aware, the FCC has conducted a series of proceedings over a long period of time in which it has:

(a) Attempted to draw the line between unregulated data processing or enhanced service activities on the one hand and regulated telecommunications services on the other, and

(b) Established the terms and conditions under which regulated common carriers, such as the Bell Operating Companies, may offer enhanced- or data processing/information-type services.

These FCC proceedings have become known as Computer Inquiry I, Computer Inquiry II, and the latest, Computer Inquiry III. The current proceeding, Computer Inquiry III, deals with the latter issue -- the terms and conditions under which communications common carriers may offer data processing and enhanced services. Oversimplifying a bit, these are services in which information is manipulated in some way rather than simply transported from one place to another.

In the earlier proceedings, the FCC established and refined a concept called maximum separation in which carriers with monopoly power (such as the Bell Operating Companies) were required to set up arms length separate subsidiaries in order for them to offer enhanced services. These subsidiaries were -- and are -- subject to a number of conditions to ensure that they are truly separate and that they do not unfairly benefit by virtue of their affiliation with the underlying monopoly service provider. Again, as the Subcommittee is fully aware, the fear has been that without the separate subsidiary requirement, the BOCs would use their control over basic telephone service -- in particular, their monopoly over local telephone loops which connect customers' premises to the telephone company switching offices -- to cross-subsidize or discriminate in favor of their own enhanced service offerings.

In Computer Inquiry III, the Commission proposed to relieve the BOCs of these long-standing, separate, arms-length subsidiary requirements if they met certain other conditions. The most important -- the center piece -- of those conditions, if you will, is that the BOCs unbundle their local exchange networks and offer the resulting basic service elements (BSEs) to all enhanced service providers -- including their own internal enhanced service operations -- on a tariffed basis and under the same terms and conditions. Both the BOCs and the enhanced service providers would then use these basic building blocks to construct their own competitive enhanced service offerings.

This concept of unbundling and allowing all enhanced service providers to have access to the basic building blocks of the local telephone network has been called Open Network Architecture or ONA. The fundamental requirements for ONA were spelled out in a Commission Report and Order released in June of 1986. The BOCs were given until February 1st of this year to work with the industry to develop their plans for ONA and to file the resulting plans with the Commission for their approval. Initial public comments on the plans were filed in mid-April and reply comments

were filed at the end of May. Before I turn to our analysis and conclusions regarding those plans, I would like to comment briefly on the importance of the entire ONA proceeding, and especially on the critical importance of these initial plans.

Importance of the Open Network Architecture Proceeding

It can be argued -- and, indeed, I personally believe-- that the ONA proceeding at the FCC is of seminal importance to the future of the telecommunications and information sectors of the economy of the United States, and because of the increasingly critical roles that those sectors play in assuring our political freedom and economic well being, to the nation as a whole. As a result, the necessary steps must be taken to ensure ONA is defined and implemented properly. I base my belief on the following six observations:

1. The importance of the information sector of the economy

   It has been widely observed that an increasing fraction-- indeed, perhaps a majority -- of our economic activity is associated with the collection, storage, processing, and dissemination of information, rather than physical goods or agricultural products. Moreover, information itself is becoming increasingly important in the competitive production, distribution, and marketing of physical goods and agricultural products in an increasingly global economy.

   Since the Bell Operating Companies, the Enhanced Services Providers and their various suppliers play such a pivotal role in the telecommunications and information industries, it logically follows that the policies and regulatory ground rules that govern their organization and conduct will play a vital role in the growth and success of the economy as a whole.

2. The continued monopoly power of the Bell Operating Companies

   As I noted earlier, the basic problem that ONA is designed to address stems from the concern that the BOCs will use their control over the local exchange bottleneck to cross subsidize or discriminate in favor of their own competitive enhanced services offerings. In fact, the Department of Justice's antitrust case was full of allegations of precisely this type of anti-competitive behavior in the predivestiture environment.

   While certain very large customers may have some alternatives to telephone company-provided local loops, especially to reach the long distance carriers, even they will remain largely dependent upon telephone company local exchange facilities and services to reach and be reached by local

customers and suppliers. Furthermore, the ordinary residential subscriber and small business subscriber will, in my opinion, still be almost entirely dependent upon their local telephone company for access to basic local and long distance telecommunications as well as interactive, two-way information services for the foreseeable future. In fact, if the BOCs continue in the direction of installing fiber optic technology in the loop plant and begin to offer broadband services such as video conferencing, their monopoly control over local access facilities may actually increase over time. Thus the terms and conditions under which the BOCs are allowed to provide competitive enhanced services is apt to grow rather than diminish in importance.

3. The loosening of the Modified Final Judgement restrictions

As the Subcommittee is fully aware, District Judge Harold Greene issued a decision this last spring that loosened the terms of the Modified Final Judgement to allow the BOCs to engage in certain previously prohibited information service activities. Even with this loosening of the so-called line of business constraints, the BOCs seem unrelenting in their pressure to have such restrictions lifted in their entirety. Thus it follows that the fraction of the information/enhanced services industry that would be impacted by unfair or anti-competitive conduct based upon BOC bottleneck control is greater than it has been and will also grow if the BOCs have their way.

4. The fundamental change in policy represented by ONA

Points 2 and 3 that I just made argue for the proposition that the means and the incentives of the BOCs to cross-subsidize and discriminate may actually increase in the future because (a) their deployment of fiber optic facilities in the exchange plant may lead to a single "wire" carrying all forms of communication into each home and business and (b) the size (and the importance) of the information market they are allowed to address may well expand even further.

In light of this growing power, it is crucial to recognize that the Computer III decision represents a fundamental shift from a structural approach to a non-structural approach to the problems of cross-subsidization and discrimination. In other words, the wall that once existed between regulated monopoly carrier activities and unregulated enhanced service activities is being replaced with certain behavioral rules embodied in the ONA concept and process. This is much more than just a cosmetic change in the Computer Inquiry rules. It is a fundamental change in how the Commission regulates the provision of services in

the increasingly critical information sector of the American economy by companies that possess bottleneck control over facilities that are essential to healthy competition in that sector.

5. The impact of the approval of the ONA plans

The proposed removal of the separate subsidiary requirements of the earlier Computer Inquiry decisions has provided the principle incentive for the BOCs to cooperate in the ONA process. Once the BOCs are relieved of the separate subsidiary requirement and they have interwoven their enhanced service activities with their basic exchange and other activities, they will have accomplished a major part of their regulatory agenda. They will have correspondingly less incentive to make further changes to protect against unfair or anti-competitive practices. Thus it is extremely important that the initial ONA plans that are now before the Commission contain the right degree of unbundling, for example, because it may be difficult to put such protection back in place once the separate subsidiary requirement is lifted in its entirety.

In the same vein, it should be recognized that the ONA concept by its very nature is an evolutionary one. It is not enough to simply get off to a good start, as critical as that is, because of the diminished incentives once the plans are approved. It also requires the development of -- and a commitment to -- a process that includes methods for expeditiously and fairly responding to Enhanced Service Provider requests for new capabilities in the BOC networks and for modifying ONA plans to fit new technological developments in those networks.

A BOC may have little incentive to cooperate in the provision of a potentially lucrative new service by an Enhanced Service Provider in the short term, if it feels that it may eventually be able to offer the same service in the long term. By the same token, it may have the same type of incentives to hold back required network capabilities for a permitted new service while it develops its own competitive response. Thus, I think it very dangerous -- even irresponsible -- to think that this future process can be left to marketplace forces alone, with little regulatory oversight, as some parties have suggested. Indeed, the removal of the separate subsidiary requirement suggests to me the need for more regulatory oversight and clearly defined methods for handling requests and complaints, if ONA is going to prove effective in the face of continued BOC domination of the local exchange network.

6. The role of the Comparable Efficient Interconnection process

As I will describe in more detail in a moment, serious concerns have been raised about the initial ONA plans, both in our own report and in the comments filed by many of the parties in the FCC proceeding. But requiring the BOCs to revise and refile their plans will not necessarily lead to any delay in new services by the BOCs. This is true because the Commission already has in place a process for allowing the provision of such services on a non-separated basis.

Basically this process allows the BOCs to offer specific enhanced services free of the structural separation requirements provided, in part, that they allow potential competitors to interconnect with their bottleneck services on a Comparably Efficient Interconnection basis. While this does require case-by-case scrutiny by the agency, it means that they can reject the BOC ONA plans and articulate a clear set of principles and guidelines for revised filings, and still not significantly hinder the offering of new services. In short there is time to get ONA right because another process is in place and working. Too much is at stake with ONA to take precipitous action.

Our Concerns with the BOC Open Network Architecture Plans

Before I actually turn to the analysis and conclusions contained in our report on the BOC ONA plans, it might be useful to briefly summarize the requirements for the plans that were laid out in the Commission's Report and Order June 16, 1986. In that action, the FCC required the BOCs to offer a set of unbundled basic building blocks, or Basic Service Elements (BSEs), of general use to the Enhanced Service Providers and others in the construction of a variety of enhanced services. According to the Commission, these BSEs were to be offered under tariff, with the BOCs own enhanced service operation purchasing the BSEs under the same terms and conditions and at the same price as unaffiliated Enhanced Service Providers.

Other conditions that the Commission imposed were aimed at ensuring parity in technical and operational characteristics, availability, and pricing. The BOCs were urged to develop their plans with the participation of the Enhanced Service Providers, and their filings were to show the nature of that participation. Finally, since the initial filings were to contain only those BSEs that could be made available within one year of plan approval, the plans were also to specify how Enhanced Service Providers could request and obtain additional BSEs to meet their needs.

In conducting our analysis, my colleague, Dr. Mercer, or his assistants read all 7,000 plus pages of the BOC ONA filings. As

a result of that analysis and subsequent review of the other comments and reply comments made in the proceeding, we have reached two principal conclusions: First, the BOCs have developed a Common ONA Model which at the threshold fails as a reasonable model of an open network architecture and, in particular, provides little meaningful unbundling of network elements. Second, there are other serious shortcomings in the plans as they now stand in terms of tariffing and pricing principles, restrictions on the use of the BSEs that are offered, commitment to an on-going ONA evolutionary process, and uniformity among the ONA plans. In the remainder of my testimony, I will briefly amplify on each of these two conclusions and then state our recommendations for correcting them.

1. Failure to develop a reasonable model of open network architecture

   In the telecommunications and computer industries, an architecture is the specification of relationships among the various parts of a system. A network architecture, then, is an architecture which defines the various parts of a network -- access, switching, signaling, inter-office transport-- and how they interconnect to accomplish the functions of the network. An open architecture is one that allows or even encourages the use of other vendors' equipment, devices, software, or services in conjunction with the system. This is most often done by organizing the system around natural modules which are physically and logically interconnected at well-specified interfaces. These interfaces use published, often industry standard, protocols and arrangements that lend themselves to widespread utilization.

   It follows that an open network architecture is a network whose natural modules or "building blocks" interconnect at established interfaces. This facilitates user choice of equipment, devices, software and services from multiple vendors of enhanced services. In terms of the local exchange telephone network, it would facilitate access to the local loop over which the BOCs have monopoly control. In the Report and Order, the Commission developed the ONA concept in a similar fashion when it stated:

   "...we consider Open Network Architecture to be the overall design of a carrier's basic network facilities and services to permit all users of the basic network, including the enhanced service operations of the carrier and its competitors, to interconnect to specific basic network functions and interfaces on an unbundled and 'equal access' basis. A carrier providing enhanced services through Open Network Architecture must unbundle key network components of its basic services and offer them to the public under tariff...

These components may utilize sub-components that themselves are offered on an unbundled basis... Such unbundling will ensure that competitors of the carrier's enhanced service operations can develop enhanced services that utilize the carrier's network on an economical basis."

The Commission is relying heavily upon ONA to prevent the BOCs from using their monopoly, bottleneck control over the local exchange telephone network to discriminate against other enhanced service providers. Note that unbundling is at the core of the ONA concept. Properly carried out, it would provide access to the local exchange bottleneck by the local carriers' enhanced service operations and to competitive enhanced service providers on the same terms and conditions.

However, when we analyzed the BOC ONA filings, we found that they had built their responses around the Common ONA Model that I eluded to earlier. This model destroys the very essence of the ONA concept. It does so by introducing the concept of a Basic Service Arrangement, or BSA, which at most maintains the status quo by defining the fundamental building blocks to be equivalent to the degree of bundling in today's network. What they end up offering as BSEs amount to little more than enhancements to the custom calling features (such as call forwarding or call waiting) that are already available on modern telephone company Central Office switches. Indeed, it could be argued that these software functions are merely features that the BOCs would or should be offering to their customers in any event. The BOCs have rejected virtually all specific requests for access to individual network elements, as opposed to what amount to largely software additions to today's services that they have offered. Moreover, the BOCs unanimously reject the concept of collocation in telephone company switching offices that would allow their potential enhanced service competitors to enjoy the same direct access to network elements that they benefit from.

In short our conclusion is that the BOCs have defined a mere caricature of a true ONA. The model that they have adopted fails to provide anything approaching the appropriate degree of unbundling and it falls far short of meeting a reasonable standard of openness as that term is used in the telecommunications and computer industries. Nor, more importantly in our opinion, does it provide a degree of openness that would allow the Commission to safely abandon its long-standing separate subsidiary requirements.

2. Other shortcomings of the ONA plans and process

In addition to the threshold problem of providing little unbundling of network elements, the BOC ONA plans also suffer from a number of other shortcomings that undermine the safeguards against the BOCs using their control of the local exchange network to unfairly disadvantage competitive enhanced service providers.

Among these other shortcomings are issues surrounding the pricing and tariffing of Basic Service Elements. As I mentioned earlier, the BOCs have an incentive to use their monopoly control over the local exchange network to control the development of their enhanced service competitors. They can do so in two basic ways: by denying them efficient access on a technical basis to the needed elements of the local exchange network, or by pricing that access in such a way that it is uneconomical. A true ONA as I described it earlier is supposed to take care of the former problem and tariffing is supposed to take care of the latter. The fact that the BOC must also purchase the BSE at the same price is supposed to moderate the incentive for the BOC to price the element too high. But as I pointed out earlier, if the BOC is prohibited from offering the resulting enhanced service or if it expects to be able to offer the service in the future, it has some incentive to charge rates that extract profits that would otherwise accrue to the competitor and/or which slow the competitor down until its own competitive service is ready.

This potential for strategic use of pricing is particularly troublesome in view of BOC references to "value of service" and "marketplace" pricing of BSEs. This type of strategic pricing, which amounts to little more than charging what the market will bear, has the potential of seriously undermining the entire ONA concept.

Another major shortcoming that we are concerned about deals with the on-going ONA process itself. The roots of the problem are easy to understand. On the one hand, no one reasonably expects -- and the Commission does not require-- that one year after approval of the plans the BOCs will be able to offer all of the ONA capabilities that they eventually can and should provide. The network will continue to evolve technically and so will the requirements of the enhanced service providers; these changes must be provided for in some continuing process. On the other hand, as I pointed out earlier in my testimony, approval of the initial plans will suddenly allow the BOCs the freedom from the separate subsidiary requirements and the service-by-service scrutiny that they now experience under the Comparable Efficient Interconnection process. That being the case, it

would not be surprising if the BOCs' ardor for the ONA process would suddenly wane upon initial plan approval. Therefore we feel very strongly that the ONA plans should not be approved until they agree to a fairly stringent, well-specified process for the continuing evolution of ONA. This is particularly important in our opinion, given the limited nature of the initial offerings spelled out in the plans as they currently exist.

Still another shortcoming in the BOC ONA plans is the lack of uniformity. We recognize that their are differences among the BOCs that may lead to valid variations in their respective ONA plans. In general we do not feel that the establishment of the correct degree of uniformity can be left entirely to the marketplace but, rather, the uniformity must be specifically provided for through voluntary industry efforts with Commission oversight and direction as necessary. Because the BOCs serve different geographic areas, they do not compete directly in the provision of network elements; therefore, there is no assurance that the marketplace will produce uniformity, unless it is to the BOCs collective advantage to do so.

Our own review of the plans reveals significant and, in our opinion, largely unnecessary variations in the plans as submitted. For example, in some instances they use different definitions of certain key elements and in some instances they satisfy a request for a particular capability in widely different ways. Some plans agree to offer a requested capability immediately; others claim that it is not possible to do so, notwithstanding the similarity between BOCs in the technology they utilize; while others may argue the request is not even within the realm of ONA!

With respect to the list of offerings -- for example, the BSEs, their technical characteristics, the conditions under which they are available, and the tariffing and pricing principles utilized -- we believe that a process should be established which requires the BOCs to examine the differences that exist among the plans and to resolve those differences, either by eliminating them or by justifying the differences to the Commission.

We have other concerns with the ONA plans, but I have touched on the most important of them here. In the time I have remaining I would like to briefly state our recommendations for correcting the problems we have identified here and in our report.

Recommendations

Our recommendations for correcting the deficiencies in the ONA plans and processes are as follows:

First, the Commission should issue a further Notice that clarifies certain key points based upon the record that has been developed to date. The key points to be addressed include the appropriate ONA model, the appropriate degree of uniformity in the plans, and the means by which the BOCs should specify future benchmarks against which progress can be measured.

Second, once this clarification is provided, the BOCs should be required to file modified ONA plans that are consistent with the clarification.

Third, a neutral industry-wide forum -- as suggested by the National Telecommunications and Information Administration and others -- should be convened to examine the details of both the early implementation of ONA and the long term evolutionary process. We believe that FCC involvement as an ex officio observer is absolutely necessary in this industry activity to ensure that ONA is evolving properly and at an appropriate rate.

Fourth, we see a great need for an early dialogue between state and federal regulators to constructively address and resolve issues such as the need for national uniformity and consistency.

Finally, we recommend that the separate subsidiary requirement be kept in place and the current Comparably Efficient Interconnection process be maintained in a stringent fashion until the problems we have identified are corrected. Too much is at stake to do otherwise.

Thank you again for the opportunity to testify today and I would be happy to answer any questions on the testimony I have given.

QUESTIONS OF SENATOR DANFORTH AND THE ANSWERS THERETO

Q. Why is Open Network Architecture (ONA) Important?

A. As I indicated in my prepared testimony, ONA is important for a number of reasons. First, it has been widely observed that an increasing fraction of the total economic activity in the United States is associated with the collection, storage, processing, and dissemination of information. Moreover, information itself is becoming increasingly important in a strategic sense to the competitive production, distribution, and marketing of physical goods and agricultural products in an increasingly global economy. Since the telecommunications and information industries in general, and the Bell Operating Companies and Enhanced Service Providers in particular, play such a pivotal role in the economy, it follows that the policies and regulations that govern their organization and conduct will play a vital role in the growth and success of the economy as a whole.

Second, the continued monopoly power of the Bell Operating Companies in the provision of local exchange facilities and services (and their participation in competitive markets which are dependent upon those facilities and services), means that they still have the means and the incentives to cross subsidize and discriminate in favor of their own enhanced service offerings. If the BOCs continue in the direction of installing broadband fiber optic facilities to homes and businesses, it is quite likely that their monopoly power will increase in the future. This means that the potential for abuse of their market power may actually increase rather than decrease.

Third, the recent loosening of the terms of the Modified Final Judgement to allow the BOCs to engage in a wider range of information service activities means that the fraction of the information services marketplace that could be adversely impacted by unfair or anti-competitive conduct by these monopoly service providers is greater. Fourth, the shift from a structural to a non-structural approach to the problems of cross-subsidization and discrimination represents a fundamental -- and untested -- change in how the Federal Communications Commission regulates the provision of services that are essential to the information sector of the American economy by firms that possess bottleneck control over facilities and services. As I indicated above, these facilities and services are crucial to healthy competition and diversity in the information sector of the economy.

Fifth, the proposed removal of the separate subsidiary requirements of the earlier Computer Inquiry decisions has provided the principal incentive for the BOCs to cooperate in the ONA process. Once the BOCs are relieved of the separate subsidiary requirement, there will be considerable less incentive for them to cooperate in the further evolution of the ONA concept and process. Moreover, after they have interwoven their enhanced and basic services activities together, it will be extremely difficult to "unscramble the egg" and return to a structural approach should that prove desirable. This change in incentives makes it imperative that a well-defined process be in place for handling future ONA requests. Without such a well-defined process, the BOCs will be in a position to unilaterally decide whether future Enhanced Service Provider requests are denied or subject to interminable delays while the BOC develops its own competitive response.

Q. What is the rationale for changing from the regulatory requirement for separate subsidiaries to non-structural safeguards such as ONA?

A. The rationale for changing from the regulatory requirement for separate subsidiaries to non-structural safeguards is based on the premise that the American public is being denied the benefits of certain advanced information services because, allegedly, such services would be uneconomic for the BOCs to provide on a separated basis.

Q. Is it important to implement ONA now?

A. Personally, I am somewhat skeptical of the proposition that American consumers are being denied significant new services under the regulatory requirement for separate subsidiaries. But more importantly, it should be recognized that the Federal Communications Commission already has in place a process for allowing the provision of enhanced services on a non-separated basis. Basically, this process allows the BOCs to offer specific enhanced services free of the structural separation requirements provided, in part, that they allow potential competitors to interconnect with their bottleneck services on a Comparable Efficient Interconnection (CEI) basis. This means that the American public does not have to be denied advanced information service offerings if they are, in fact, being held back by the separate subsidiary requirement. Because of the overwhelming importance of ONA and the fact that the BOCs are not held back from providing advanced services on a CEI or separated basis, I see no reason to rush forward until the serious shortcomings of the current ONA plans are corrected.

Q. How will customers in rural areas benefit from ONA?

A. Unfortunately, most of the customers for enhanced services are located in urban/suburban areas. Moreover, the type of telephone switching equipment located in rural areas often does not lend itself as readily to the provision of enhanced services as does the stored program controlled, digital switching equipment typically used in urban/suburban areas. In addition, both residential and business customers living in rural areas are less likely to have alternatives to telephone company provided local exchange facilities. This means that without close regulatory scrutiny, these rural customers are apt to be regarded as a source of discriminatory subsidies rather than a recipient. Thus, while it might be hoped that ONA would facilitate the provision of enhanced service in rural areas because of the ubiquitous presence of the local telephone companies, it is likely that the direct benefits of ONA will not come to rural America as fast as they will to urban/suburban areas.

It should be noted in passing that significantly more than half of the land area of the United States is served by independent (i.e., non-BOC) telephone companies that are not bound by the separate subsidiary requirement. Also, as I mentioned above, the BOCs are free to offer enhanced services on a separated basis or through the CEI process in the remainder of the country under the current rules.

Q. What are the advantages and disadvantages of uniform ONA plans?

A. The advantages of uniformity among the ONA plans are significant. Without a significant degree of uniformity, an enhanced service provider will face almost overwhelming difficulties in rolling out an enhanced service on a nationwide basis. An analogous situation would be where a manufacturer of television sets would be faced with different technical standards in seven regions of the United States or even worse, in each of the fifty-one state regulatory jurisdictions. In fact, the situation could even be worse in the case of enhanced services that rely upon local telephone company monopoly services. This is because of the presence of the 1,400 or so non-BOC telephone companies that are not required to submit plans.

I recognize that there are differences among the BOCs that may lead to valid variations in their respective ONA plans. But in order to not seriously inhibit the development and growth of enhanced services, these differences should be minimized. Our own review of the plans reveals significant and, in our opinion, unnecessary variations in the plans as now submitted. In general, my colleagues and I do not believe that the optimum degree of uniformity can be left entirely to the marketplace. Rather, we believe that the

uniformity must be sought through voluntary industry efforts coupled with direct Commission oversight and direction as needed.

Q. In March, Judge Greene decided to allow the Regional Bell Operating Companies (RBOCs) to provide transmission for information services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be?

A. In my opinion, it is still too early to accurately assess the effects of Judge Greene's decision of last March. From what I have observed, various RBOCs have moved to develop the permitted services and to obtain the necessary regulatory approvals (e.g., of their associated CEI plans). In the long term, the ultimate success of Judge Greene's decision will depend heavily upon the Commission's actions in the ONA proceeding and in assuring the efficacy of the other non-structural safeguards that are designed to prevent cross-subsidization and discrimination by the RBOCs. As I indicated in my formal, prepared testimony, this change in policy on the part of the Federal Communications Commission is more than just a cosmetic change in the Computer Inquiry rules. Rather, it represents a fundamental -- and still untested -- change in how the Commission regulates the RBOCs at the very time the stakes are increasing dramatically as a result of (a) fundamental changes in the economy and (b) Judge Greene's decision to allow them greater participation in the information service arena.

If the deficiencies in the current ONA plans are not corrected, I have grave doubts about the future prospects for a diverse, competitive electronic information marketplace. In summary, if the ONA concept is not implemented properly and administered effectively on an on-going basis, then the Commission's abandonment of the separate subsidiary concept may prove the height of folly and Judge Greene's decision to expand their permitted activities may likewise prove to be unwise.

Senator INOUYE. Mr. Walker.

Mr. WALKER. Thank you, Mr. Chairman. I have a prepared statement for the record, which I would like to briefly summarize.

Telenet provides value-added data network services, electronic mail, transaction processing and other information services, in competition with many other enhanced service providers, or ESPs. Several thousand host computers operated by Telenet customers reach millions of users through our data network, providing a vast array of different information services. This network and all the information services which it provides, as well as data networks operated by other ESPs, are critically dependent upon underlying basic transmission facilities obtained from the BOCs.

As a result of decisions by the FCC and by Judge Greene, ESPs are now faced with entry by the BOCs into information services markets on a structurally integrated basis, subject to their implementing acceptable ONA plans. For this reason, ONA is of critical importance.

As Gerry Brock described this morning, the Commission had several objectives in creating the ONA concept. First, and most important, ONA was intended as a non-structural safeguard which would preclude

BOC discrimination against non-affiliated ESPs. Also, the Commission sought to make the basic network more responsive to the needs of the enhanced services industry and its users through provision of needed basic service elements on an unbundled basis. As envisioned by the Commission, ONA will not only preserve competition in enhanced services as the BOCs enter the market, but should also stimulate the growth of the market and the widespread availability of information services to the American public.

Unfortunately, however, ONA as proposed in the plans filed by the seven RBOCs in February will not achieve these objectives. There is considerable diversity among the plans and some are better than others. However, in general that the plans fail to meet the needs of the enhanced service industry for new network functionality. They introduce only limited capabilities in the first year and provide little information regarding roll-out of additional capabilities in succeeding years.

The plans fail to meet the needs of the ESPs and users for a reasonable degree of unbundling and of uniformity from one region to another.

They also indicate BOC intentions in most cases to employ market-based or strategic pricing for ONA services, rather than cost-based rates.

The plans seek, in most cases, to avoid federal tariffing of ONA services, even when used for interstate communications.

They indicate an intention in many cases to use ONA as an excuse to impose carrier access charges upon ESPs and, in some cases, to forcibly migrate ESPs to higher-priced facilities.

And last, but not least, the plans fail to provide for truly non-discriminatory treatment of BOC-affiliated enhanced services versus their competitors.

These problems can be boiled down I think into two major categories. First is the failure to deliver needed features and functions on an unbundled and uniform basis at cost-based rates; and second is the failure to assure equal access for competing ESPs to the underlying BOC network capabilities which the BOCs will utilize in their own enhanced services.

I would like to address the latter issue first; that is, non-discrimination or competitive parity. Avoiding discrimination is probably the most critical objective of ONA. It is also a requirement imposed by Judge Greene upon the BOCs in his March 7 Order permitting them to provide certain information services. Yet, most of the ONA plans contemplate various forms of discrimination in favor of BOC enhanced services. Examples include exclusive rights to central office co-location, differential pricing of access loops, provision of so-called ancillary services on more favorable terms, and a double standard for access to customer proprietary network information, or CPNI. Among the seven RBOCs, only Ameritech has committed to across-the-board non-discrimination in all of these areas, except CPNI.

The failure to deliver needed features and functions is common to all the plans. I cannot speak for the voice side of the enhanced services industry, but data ESPs have received very little of the functionality that they requested. It is understandable that within the first year after plan approval, the RBOCs cannot introduce many of the new network capabilities we need, because evolution of the network takes more time than that. But none of the plans provide any of the specifics we had expected regarding introduction of additional capabilities in successive years, even though telephone network planning typically occurs many years in advance.

Lack of adequate unbundling and uniformity is also common to the plans. These aspects of ONA significantly affect the efficiency of ESP operations and the types of services that ESPs are able to offer to their users.

With respect to pricing and tariffing policies, each of the RBOCs—with the exception of the two companies represented here this morning, Ameritech and NYNEX—has indicated an intention to price ONA elements on the basis of market demand or value of service. This is totally inappropriate for monopoly services, such as ONA. It is equally inappropriate for the RBOCs to seek to utilize ONA as a means of imposing carrier access charges upon ESPs and their users, particularly in light of the FCC's recent acknowledgement that such charges would gravely injure the enhanced service industry and constrain the development of new information services. Yet several of the plans strongly imply that imposing such charges upon ESPs is part of the RBOCs ONA agenda.

A corollary to the need for cost-based ONA tariffs is the need for federal tariffing of such services offered for interstate use, in addition to state tariffing for intrastate use. The Commission clearly has jurisdiction over local exchange carrier services used for interstate applications, and it should exercise such jurisdiction in this instance, to ensure both that the rates are cost-based and that the services are free of discrimination. We are not calling for preemption here. The FCC simply needs to exercise the jurisdiction that it already has.

In sum, none of the RBOC plans, in our view, is acceptable in its current form. What needs to be done is straightforward. We agree with NTIA that the Commission must give the RBOCs specific guidance as to how to amend their plans in a number of areas, some of which I have touched on this morning. Once these amendments are made, the plans can be implemented through appropriate tariff and other filings.

This subcommittee can facilitate the proper completion of the ONA process though its continuing oversight of the Commission. For example, although the Commission has articulated the goal of non-discrimination as one of the primary objectives of ONA, its specific policies in this regard leave much to be desired. This needs more work by the Commission, and an expression of Congressional concern for the achievement of across-the-board non-discrimination could be quite helpful.

With foresight and effort, we believe that ONA can be made to work. If this is accomplished, the American public will be the real winner.

Thank you, Mr. Chairman.

Senator INOUYE. Thank you, Mr. Walker.

[The statement and questions and answers follow:]

STATEMENT OF PHILIP M. WALKER, VICE PRESIDENT AND REGULATORY COUNSEL, TELENET COMMUNICATIONS CORPORATION

Good morning. It is my distinct pleasure to have the opportunity to address the Subcommittee about such an important issue to the information industry as ONA, Open Network Architecture.

Since we have furnished copies of our FCC Comments to members of the Subcommittee, I will not bore you with excruciating detail this morning. Instead, I will cast my remarks more generally and discuss the background of ONA; the FCC's stated expectations for ONA; the RBOCs' ONA proposals; and the policy issues confronting the FCC and the industry.

As I will discuss in greater detail below, the concept of ONA arose in the FCC's *Computer III* proceeding, in which it reexamined the rules adopted in *Computer II* which permitted AT&T and the BOCs to offer enhanced services only through fully-separated subsidiaries. AT&T and the BOCs sought to be free of this requirement, claiming that the public was being deprived of services which they could uniquely provide, and that the natural efficiencies of integration of enhanced services into their basic networks would lead to new and more affordable services. In the main, the FCC agreed with the AT&T and the BOCs. However, it also recognized that such integration carries with it a much greater potential for them to cross-subsidize enhanced services, and to discriminate against competing providers of such services, than the structural separation of *Computer II* would permit.

To address the cross-subsidization problem, the FCC adopted a set of accounting rules to monitor the boundary between regulated and unregulated services offered by the same firm. To minimize the potential for discrimination against competitors, the FCC adopted—under the rubric of "ONA"—a set of principles designed to "open" the BOC monopoly networks so that competing providers of enhanced services could realize some of the same "efficiencies" of network integration as the BOCs. Implementation of an approved ONA Plan is a prerequisite to total removal of the *Computer II* structural separation requirements as to AT&T and each RBOC; on an interim basis, they are permitted to offer specific enhanced service upon FCC approval of a "Comparably Efficient Interconnection" (CEI) Plan demonstating that competing offerors of that particular service will not be discriminated against in terms of availability, price or quality of network access and services.

Before turning to the current status and problems of ONA, let me provide a brief sketch of the existing enhanced service marketplace.

THE ENHANCED SERVICE INDUSTRY IN THE UNITED STATES

The enhanced services industry includes a variety of voice and data services and markets. The industry encompasses value-added networks (VANs); information and gateway services, including database providers, electronic publishing, videotex and audiotex services; voice messaging and electronic mail; and alarm monitoring. Each of these enhanced offerings relies on local and long distance carriers to provide the telecommunications infrastructure on which enhanced services providers (ESPs) build their businesses.

Value-added networks provide data network services based on packet switching technology coupled with protocol conversion. That is, VANs allow computers and terminals with disparate protocols to "talk" to each other. VAN networks generally consist of concentration and protocol processing equipment located in cities and towns across the country, interconnected by high-speed digital lines leased from local telephone companies and interexchange carriers. Terminal users connect to the VAN's network via local dial lines, private lines, and 800 service. "Host" computers, offering the information services which users desire to access, connect to the network via private lines.

The VAN market includes more than a dozen value-added network service providers, including AT&T (Accunet Packet Service), ADP (Autonet), CompuServe, Computer Sciences Corporation (Infonet), General Electric Information Services, Company (MarkNet), IBM (Information Network), Wang Information Services Corporation, Western Union, Tymnet, and Telenet.

Information service providers, another segment of the enhanced services industry, operate host computers that provide database services, electronic mail, transaction processing, and a wide variety of other on-line services. Typically, these host computers are accessed through public and private VAN networks to which they are connected through dedicated private lines.

According to the January 1988 edition of Directory of Online Databases, over 3500 databases are available through 555 on-line services, worldwide. Some of the more popular information services available in the United States include CompuServe,

Dialog, Mead Data Central's Lexis and Nexis services, Dow Jones' News/Retrieval, Bibliographic Retrieval Service (BRS), The Source, Quantum Link, GEnie, and Quotron. These services and others provide information to residential, business, not-for-profit, government, and academic users on a variety of subjects including stock quotes, mortgage rates, airline flights, agricultural statistics, medical data, encyclopedic and journal references, and aviation weather reports.

Other enhanced services resident on VAN networks include electronic mail (E-mail) services, electronic data interchange (EDI) services, and transaction and credit card processing services. More than a dozen E-mail providers offer public services in the United States today, including Western Union's Easylink, MCI Mail, British Telecom's Dialcom, Telenet's Telemail and Tymnet's OnTyme.

EDI services, a growing VAN application, allow businesses to exchange—electronically—purchase orders, invoices, shipping waybills, and other business documents in a "paperless" environment. General Electric, McDonnell Douglas, and Telenet (among others) provide such services.

In addition to VAN services and information applications associated with VAN offerings, the enhanced services industry includes voice messaging services and fire and burglar alarm services. Voice messaging services provide computerized telephone answering capabilities for individuals and businesses in the event that the called number is busy or not answered, and "voice mailbox" services for business organizations. Alarm companies provide computer-based home and business protection services, using telecommunications links to central monitoring stations.

In short, the enhanced services industry in the United States is diverse and vigorous. The RBOCs have now received the "Greene Light" to enter certain areas of the enhanced/information services market. While it is true that such entry has the potential for stimulating the growth of the market, it also has the potential for destroying competition. It is for this reason that the implementation of ONA in a meaningful way is so significant to the competitive enhanced services industry. ONA supplies the framework for ensuring that RBOC entry into and participation in the enhanced services marketplace will not be anticompetitive.

OPEN NETWORK ARCHITECTURE

In June 1986, the FCC released the *Computer III* Order that called for replacing the structural separation requirements of *Computer II*—separate RBOC subsidiaries for the provision of enhanced services—with certain non-structural safeguards. The most significant of these non-structural safeguards is ONA.

The June 1986 Order required the RBOCs to submit Open Network Architecture Plans on February 1, 1988, specifiying features and functions that they would make available to enhanced service providers (ESPs) on an unbundled and equal access basis. The initial set of such ONA offerings was required to be introduced within one year of Plan approval. Upon Plan approval, the RBOCs would be permitted to enter enhanced service markets on a fully integrated basis, without the FCC requirement of a separate subsidiary, and without filing CEI plans for each specific enhanced service they wish to offer.

The RBOC ONA Plans were filed on February 1, 1988. Comments and Reply Comments were filed with the FCC on April 18 and May 31, respectively. On June 22, a broad based coalition of parties who have been active participants in the ONA process during the past two years submitted joint Supplemental Comments to the Commission.[1] These Supplemental Comments were filed in support of many of the procedural and policy recommendations presented by NTIA in its Comments and Reply. I will discuss many of these recommendations below; this timeline merely suggests where ONA stands today.

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[1] These parties were ADAPSO, ADT Security Systems, Inc., Alarm Industry Communications Committee, ALC Communications Corporation, American Newspaper Publishers Association, American Petroleum Institute, Association of Data Communications Users, Association of Telemessaging Services International, Inc., California Bankers Clearing House Association, Coalition of Open Network Architecture Parties, Committee of Corporate Telecommunications Users, CompuServe Incorporated, Computer and Business Equipment Manufacturers Association, The Dun and Bradstreet Corporation, Electronic Data Systems Corporation, Electronic Mail Association, GE Communications and Services, Hayes Microcomputer Products, Inc., Independent Data Communications Manufacturers Association, Information Industry Association, International Communications Association, Mastercard International Incorporated, McGraw-Hill, Inc., New York Clearing House Association, Tele-Communications Association, Telenet Communications Corporation, Tymnet-McDonell Douglas Network Systems Company, US Sprint Communications Company, and VISA U.S.A., Inc.

The ONA Plans, as filed, were a great disappointment to the enhanced services industry, as is apparent in the Comments filed on April 18. It is important to note, however, that the Plans are not the final word on ONA. Instead, they represent a continuation of the ONA dialogue that was required by the Commission. Many ESPs committed substantial resources to meeting with the ROBCs over the past year and detailing their specific ONA needs. However, it was not until the Plans were filed that ESPs had any solid information about what features and functions the RBOCs would roll out, what technical interconnections might be involved, or what pricing, tariffing and deployment policies the RBOCs intended to follow. Our Comments and those of other ESPs were simply responses to the RBOCs' notions of what constitutes Open Network Architecture. As you might expect, the ESPs and the RBOCs did not see eye to eye on many of these matters.

First, very little in the way of unbundled new features has been offered—particularly those requested by data-oriented ESPs. Of at least equal concern, it appears from the Plans as filed that a number of RBOCs view ONA as an opportunity to reprice existing services to capture greater profits, based upon their apparent view that the "value" of these services exceeds the current tariff rates charged for them. For example, BellSouth proposes (1) to create a special "ESP-only" tariff in which conventional business lines (ordinary local exchange dial lines) as well as new ONA functionality will be offered to ESPs at "market-based" or "value of service" rates, and (2) to preclude ESPs from taking service under any non-ESP tariff, regardless of whether an ESP wishes to obtain ONA functionality.

If ONA is to meet the objectives which the Commission laid out for it, it will have to meet two overarching criteria. First, it must deliver needed features and functions, on an unbundled basis and at cost-based rates; and, second, it must be non-discriminatory; i.e., competing ESPs must have equal access to the BOC network capabilities which the BOCs will utilize in their own enhanced services.

COMPETITIVE PARITY

Let me take the latter issue—non-discrimination or competitive parity—first. Clearly, no one has claimed explicitly that RBOC entry into enhanced service markets should be in any way "privileged". To the contrary, avoiding such a discriminatory situation is probably the most critical objective of ONA. In his March 7, 1988, Order permitting the RBOC's to provide certain information services, Judge Greene also addressed this concern, stating (p. 66) that "[i]n the performance of the service authorized herein, no BOC shall discriminate between or among providers of information or against other providers of information services or of voice storage and retrieval services." Yet, most of the RBOCs' ONA Plans—which were submitted prior to the March 7 Order—incorporate "privileged" positions on several key items. Let me be specific:

All but one of the RBOCs refuses to provide central office collocation to competing ESPs, while all but one permit collocation for RBOC-affiliated enhanced service operations.[2] While we appreciate the difficulties that collocation poses for the RBOCs, there can be no doubt that collocation also provides an RBOC-affiliated ESP with a competitive advantage. Although each of the RBOCs, with the exception of BellSouth, has proposed to lessen this disparity through banded pricing or other forms of "price parity" for access to the network—which we applaud—collocation, nonetheless, offers other financial and operational advantages not available to competitive ESPs.[3] We have urged the FCC to reexamine its conclusions that the RBOCs

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[2] US West has a published corporate policy permitting ESP collocation on a case-by-case basis where feasible, but opposes any regulatory requirement which mandates the offering of collocation. Consistent with this policy, Telenet has collocated one of its network switching nodes in a US West Communications (Mountain Bell) central office in Phoenix, Arizona. We expect other such arrangements in this region in the future.

Although not stated in its ONA Plan, Ameritech has stated informally that it will provide information services through a separate subsidiary, rather than on an integrated basis within its operating companies, and that it will not permit such separate subsidiary—or other ESPs—to collect in telephone central offices.

We see no reason why the other RBOCs cannot follow the example of either US West or Ameritech, and provide parity of access to the central office by either permitting or denying collocation on a non-discriminatory basis.

[3] Like BellSouth, the Pacific Companies' ONA Plan reserved to themselves the right to allow affiliated ESPs to take advantage of what has come to be called "short wire" prices for network access. Pacific modified this approach in its Reply, indicating that Pacific's ESPs will pay the same price for access as other ESPs located within the first band of its mileage-banded ONA tariff. Pacific did not indicate, however, the distances covered within its first band, so it is unclear how much relief this would provide to competitive ESPs.

will not be required to offer collocation to competing ESPs or to take other steps which effectively offset the competitive advantages afforded to an RBOC-affiliated ESP which is permitted to collocate in the central offices.

Each of the RBOCs classifies certain ESP requests for network capabilities as "ancillary" services which are "outside of ONA" and—with the exception of Ameritech—claims that they are thus not subject to non-discrimination requirements.[4] Billing services and access to network diagnostics are the most-requested capabilities which fall into this category. Discrimination may occur in the offering of some ancillary services as different prices to affiliated and non-affiliated ESPs, or in the selected offering of such a service. An example of this is BellSouth's proposal to provide access to its order entry and tracking system for basic services only to its own ESP.

Each of the RBOCs intends to take advantage of the Commission's asymmetrical Customer Proprietary Network Information (CPNI) rules. These rules require the RBOCs to solicit each of their customers to determine whether information about the customer's account can be used to market enhanced services to him/her. But, here's the rub. An RBOC's ESP can utilize the information if the customer takes no action. Competitive ESPs, on the other hand, can only obtain the information if the customer takes the initiative to authorize it. While it is clear that the RBOCs are acting in conformity with the FCC's rules with respect to CPNI, ESPs submit that such advantages are inappropriate, and that the Commission should revise its rules to require parity of access to CPNI.

Thus, with respect to competitive parity in the enhanced services marketplace some problems remain. The principle of competitive parity suggests to us that *whatever* telco capabilities—including collocation, network support systems and CPNI, as well as basic network services—an RBOC makes available to its own affiliated ESP must also be made available to non-affiliated ESPs on equal terms and conditions. To do otherwise is not only patently and fundamentally unfair, but it also undercuts the goal of ONA—competition in enhanced services.

NETWORK FUNCTIONALITY

Although ONA was designed to establish a "level playing field" in the enhanced services marketplace, competitive parity is only one part of a two-part effort. The second aspect of ONA—stimulating the enhanced services marketplace—is equally significant. Here, the problems are more critical and the solutions more elusive.

Functionality: Requests vs. Performance

The provision of unbundled basic network features and functions, in practice, has two aspects: the availability of a capability and the price charged for it. Due to the diversity within the ESP industry, in terms of types of enhanced services provided and the resulting needs for underlying basic network functionality, the RBOCs received a large number of requests for various types of ONA functionality. Many of these requests simply reflected a desire to obtain broader availability of a feature which is offered selectively today, or to obtain unbundled access to a feature which is currently offered as part of a bundled service arrangement. Other requests sought new basic network features to meet specific ESP needs.

Taken as a whole, the RBOC ONA Plans largely responded to requests in the former category, and pushed off the latter to the indefinite future. Requests from data-oriented ESPs fared even worse than did voice-oriented requests. Telenet and Tymnet, the two largest VANs, submitted a joint request to the RBOCs last year containing five proposed high-priority ONA offerings. To our disappointment, when the ONA Plans were filed on February 1, we found that only *one* of these requests was met by *one* of the RBOCs in a manner which we could utilize—NYNEX' proposed offering of derived-channel access for data transmission between an ESP and its subscribers via existing telephone loops. Our other requests were either rejected by various of the RBOCs, deferred for future consideration—with no indication of when, how, or even if they would be implemented—or met with service proposals which are operationally or economically infeasible for us to use.

Closely related to the question whether ONA will provide the functionality needed by ESPs is the question whether it will be sufficiently uniform from one RBOC to another across the country. Uniformity has many dimensions, such as the functionality provided, the technical interfaces which an ESP or user must imple-

[4] Ameritech, like the other RBOCs, classifies certain capabilities as "ancillary" services, but has committed to provide them on a non-discriminatory basis to its own ESP and to competitors. To our knowledge, no other RBOC has made such a commitment.

ment in order to utilize that functionality, the terminology and tariff structures for the service offering, and the operational procedures (ordering and billing, etc.) employed by the BOC in providing the service. Lack of uniformity in any of these dimensions can impose a real hardship upon ESPs and end users, such as Telenet, who have national networks and must obtain service from all seven of the RBOCs. Unfortunately, the RBOCs seem to have devoted little energy to this aspect of ONA planning, and their Plans reflect a high degree of non-uniformity in almost every respect.

ONA Pricing

As indicated above, the second aspect of ONA network functionality is the price charged for the feature or function. With the exception of Southwestern Bell, no RBOC's Plan included information about price levels for the ONA services they proposed; and Southwestern Bell's illustrative tariff was both incomplete and tentative. All of the RBOCs, however, discussed their pricing philosophy.

With the exception of Ameritech and NYNEX, each of the RBOCs has stated an intent to price ONA elements on the basis of "market demand" or "value of service." We have no quarrel with the proposition that the *availability* of new functionality should reflect market demand—i.e., the BOCs should not invest in delivering new ONA services unless there is sufficient demand for the service in question. However, it does not follow that the BOC may price such elements on the basis of whatever the traffic will bear. As the role supplier of network-based functionality in the local exchange, the BOC must be limited to cost-based pricing of such features. It is totally inappropriate for a monopolist to price based on market demand, because there is no competition on the supply side of the ledger to assist in calibrating prices.

It is equally inappropriate for the RBOCs to seek to utilize ONA as a means of imposing carrier access charges upon ESPs—particularly in light of the FCC's recent acknowledgment that such charges would gravely injure the ESP industry and severely constrain the development of information services. Yet several of the Plans—even those of the few RBOCs which support the use of cost-based pricing—strongly imply that imposing such charges upon ESPs is part of the RBOCs' ONA agenda.

A corollary to the need for cost-based ONA tariffs is the need for Federal tariffing of such services offered for interstate use, in addition to the state tariffing for intrastate use. According to established legal precedent, the FCC clearly has jurisdiction over local exchange carrier services used for interstate applications, and it should exercise such jurisdiction in this instance. Otherwise, left to their own devices, many of the state PUCs will accept—or even require—ONA tariff rates that are set well above cost and treat ONA as a vehicle for subsidizing basic local service. Such above-cost pricing, however, will not stimulate growth of the enhanced services market, and may even force the termination of some existing information services.

CONCLUSION

The ESPs' frustration in reviewing the ONA plans is reflected in their individual comments as well as in their joint Supplemental Comments. For the most part, the submitted ONA Plans are not satisfactory: they do not offer requested services; lack uniformity; they rely on a model which bundles rather than unbundles capabilities; they lack specific pricing information but generally propose to charge market rather than cost-based rates; they propose use and user restrictions in clear contravention of the FCC's requirements, they discriminate in the handling of ancillary services, CPNI and collocation; they reject FCC jurisdiction over ONA through the predominant use of state tariffs; and they lack deployment schedules which hampers ESP network and service planning.

Of course, not all plans contain all of these defects. Most plans have one or more aspects which are consistent with the FCC's requirements and will promote the development of the information industry in a non-discriminatory fashion. But no plan is acceptable in its current form. In our view, the BellSouth plan is farthest away from meeting the ONA goals, because of its proposals regarding pricing, tariffing and use restrictions. For nearly the same reasons, the Ameritech and NYNEX plans come closest to meeting these goals; Ameritech scores particularly high marks with respect to nondiscrimination overall.

What needs to be done is not complex. As suggested by NTIA, the FCC must give the RBOC specific directions as to how to amend their plans. Once these amendments are made, the plans can be implemented through appropriate tariff and other filings. With foresight and effort the FCC can make ONA work. If it does so, the American people will be the real winners.

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Philip M. Walker
Vice President and
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August 8, 1988

Ms. Regina M. Keeney, Minority Counsel
Committee on Commerce, Science, and Transportation
United States Senate
Washington, D.C. 20510-6125

Dear Ms. Keeney:

Thank you for your letter of July 22, providing several questions as a follow-up to your July 14 hearing on Open Network Architecture. I appreciate the opportunity to respond to Senator Danforth's concerns. Let me address each of the questions in turn.

1. Why is Open Network Architecture (ONA) important? ONA is the key to enhanced services market entry on an integrated basis by the Bell Operating Companies (BOCs). It also is intended to stimulate the development of the enhanced/ information services market, by making available to competing providers of enhanced services (both BOC and non-BOC) the technical capabilities of the underlying basic telephone network on an unbundled basis.

Under Computer II, AT&T and the BOCs were permitted to offer enhanced services only through the structural safeguard of separate subsidiaries. Computer III, which introduced ONA and required the BOCs to file ONA Plans by February 1, 1988, permits the BOCs to provide enhanced services on an integrated basis once ONA and several other non-structural safeguards are in place.

The non-structural safeguards mandated in Computer III -- comparably efficient interconnection (CEI), open network architecture (ONA), cost allocation rules, network information disclosure, and access to customer proprietary network information (CPNI) -- are mechanisms that were designed to minimize opportunities for anticompetitive conduct on the part of AT&T and the BOCs as they enter the competitive enhanced services marketplace on an integrated basis.

As I indicated in my written statement, many of the RBOC ONA Plans indicate intentions to discriminate in favor of BOC-affiliated enhanced service operations, such as in access to order entry and tracking systems, maintenance and diagnostic data bases, CPNI, billing services, and collocation. Additionally, the RBOC Plans generally fail to provide cost-based rates for ONA services, fail to meet the needs of ESPs for new network functionality, and fail to address uniformity concerns. These shortcomings must be resolved before ONA can fulfill its objectives.

2. **What is the rationale for changing from the regulatory requirement of separate subsidiaries to non-structural safeguards such as ONA?** In its Computer III proceeding, the FCC concluded that structural separation was costly, inefficient, and a constraint on innovation, and thus decided to remove the structural separation requirements on AT&T and the BOCs, subject to their compliance with the non-structural safeguards noted above.

It is undoubtedly true that structural separation imposes certain "opportunity" costs on AT&T/BOC provision of enhanced services, primarily in terms of foregone operational efficiencies; however, Telenet has repeatedly argued that the FCC exaggerated these costs and failed adequately to consider other equally significant costs associated with its non-structural-separation approach. Such latter costs include (a) the costs of implementing ONA and the other non-structural safeguards, and (b) the potential costs to society of reduced competition in enhanced service markets -- such as retarded innovation, fewer alternatives available to the public, and higher prices -- if the safeguards, as implemented, prove inadequate to prevent AT&T/BOC anticompetitive conduct. It remains to be seen whether the FCC's decision to scrap structural separation was, on balance, a good one.

3. Is it important to implement ONA now? From a technology standpoint, there is no reason to delay implementation of the BOC ONA offerings once issues of technical uniformity have been resolved. The offerings described in the ONA Plans filed on February 1 are largely based on existing telephone network capabilities, and thus involve little new investment in the network, and little risk to the BOCs or to their general ratepayers.

By the same token, however, ONA as currently proposed by the RBOCs provides little in the way of new network services needed by ESPs. Thus, from an ESP perspective, ONA implementation at this time would be largely "symbolic," with little real benefit for ESPs and their customers. Telenet has urged the FCC to require that the RBOC ONA Plans include multi-year deployment plans which provide for the phased introduction of additional network functionality needed by ESPs.

Also, the RBOC ONA Plans should not be approved before a full discussion and thoughtful resolution of outstanding public policy issues -- such as pricing philosophy, jurisdiction, non-discrimination in service offerings, unbundling, uniformity and ubiquity, and deployment -- occurs. The FCC's pro-competitive ONA objectives would be undermined if the Commission, in its haste to reach a decision on the Plans, gave these matters short shrift.

4. How will customers in rural areas benefit from ONA? No RBOCs other than Ameritech and BellSouth commit to making ONA functionality available in secondary or rural markets. In fact, Ameritech should be commended for its leadership position with respect to its intention to introduce ONA functionality in secondary and rural areas in each of the Ameritech states in order to determine the need for ONA services in such areas. Each of the remaining RBOCs proposes to provide ONA functionality only where "market demand" (as determined unilaterally by the RBOC) warrants. In most cases, RBOCs propose to deploy ONA functionality in a limited number of major metropolitan areas within the individual regions.

5. What are the advantages and disadvantages of uniform ONA Plans? The efficient operation of nationwide enhanced services, such as Telenet's public data network, requires reasonable uniformity in basic service element (BSE) nomenclature, functionality and classification; ONA tariff structures; technical interfaces; and administrative procedures. A multiplicity of BSE names and differences in functionality provided, arbitrary classifications of capabilities (e.g., as BSEs, ancillary services, complementary network services, and "other" network services), and a wide variety of technical interfaces will lead to unnecessary confusion, fragmentation, and expense. While ESPs generally do not advocate the establishment of identical offerings across RBOCs, ESPs do urge that a reasonable degree of uniformity is needed in order to realize industry-wide operational efficiencies and cost savings.

6. In March, Judge Greene decided to allow the Regional Bell Operating Companies to provide transmission for information services, voice storage and retrieval, and electronic mail. What has been the effect of that decision so far? What will it be? To date, this decision has resulted in several RBOC CEI proposals pertaining to voice messaging services, gateway services, and electronic mail offerings. Currently, each of these proposals is pending before the FCC. While we expect the RBOCs to enter these markets, it remains to be seen to what extent RBOC entry (1) will expand the availability of information services to residential consumers, or (2) will adversely impact the competitive market for enhanced and information services.

* * *

Please do not hesitate to contact us if you would like additional information about ONA. This is a topic that we consider to be vital to the development of the US information services marketplace. I appreciate the opportunity to testify before the Subcommittee and look forward to talking with you on these matters again.

Sincerely,

Philip M. Walker

Senator INOUYE. Mr. Tirman.

Mr. TIRMAN. Thank you, Mr. Chairman.

My name is Bob Tirman, I am the Manager of Telecommunications Programs for Digital Equipment Corporation. I appreciate the opportunity to be part of this panel today and I would like to highlight some of the major points submitted in my written testimony.

Mr. Chairman, Digital believes that ONA will allow American consumers to have ubiquitous access to a variety of useful information services offered by innovative information services industry and based on an open and non-discriminatory network. The development of open network architecture must certainly balance the interests of the regional operating companies and the enhanced service providers, but in the debate over those interests no one should overlook the interests of the current and potential users of those services.

Digital has a substantial interest in the success of ONA. Headquartered in Maynard, Massachusetts and with over 120,000 employees in 55 countries, Digital is the leading producer of network computer systems. We have worked closely with not only the telecommunications industry in developing the computer based technology used in the development of the public telephone network, but also in providing such systems to members of the information services industry.

In addition, we have actively supported FCC policies seeking to promote an open public telephone network for information services.

I would like to make three major points regarding open network architecture. First, the regions initial ONA plans which represent almost two years of planning and industry discussions are a positive first step in ONA development. Although there are some problems, these plans represent legitimate, good faith efforts to meet the Commission's ONA requirements.

A fully implemented ONA envisioned by other parties simply cannot be met by the current national telephone network. The Commission has recognized this by adopting general guidelines for ONA and encouraging cooperative efforts within the information services industry. The Commission can serve as a catalyst in this effort but the ultimate design of ONA should be with the industry and not the agency.

Mr. Chairman, at the risk of being redundant, I would like to discuss five areas needing additional work regarding the open network architecture plans.

First, there is a wide disparity among regions' plans and what ONA functions will be available, how they are to be offered and tariffed. This disparity is understandable since each region has its own central office capabilities, its own marketing perspectives and its own rate structure. However, we believe greater harmony among the regions is necessary so that information service providers can accurately determine the value of various ONA services and how to utilize them in their own services. Congress and the Commission should encourage the industry to work for a maximum practical uniformity of these ONA services.

Second, in the area of pricing for ONA services, we see three areas needing improvement. None of the regions provided initial prices for their proposed services. Obviously it will now be difficult for information service providers to evaluate these ONA services for their own use without such pricing information. Next, some regions intend to price their ONA services not on a cost basis but on what the market will bear. We fear that such pricing mechanisms will restrict demand for some of these services and slow the development of the information services industry.

And finally, a few regions seem to include access charges on customers for ONA services. As this Committee is aware, such charges could severely retard the vitality of the emerging information services marketplace.

Mr. Chairman, we believe it is appropriate that Congress and the Commission send a very clear message that open network architecture cannot proceed until these pricing issues are resolved.

The third concern with the regions' plans is the apparent intent of some to tariff their services solely at the state level. Certainly states have a significant and legitimate interest in open network architecture. We also believe that FCC oversight is necessary in maximizing the nationwide utility and availability of ONA. Accordingly it is necessary and desirable that these services be tariffed at federal level where they involve interstate traffic.

Fourth, most plans call for ONA deployment to take place in major metropolitan areas. This is again understandable because of the short time required to offer the first services and the investment required to support a wider geographic deployment. Over time, however, Congress and the Commission should encourage the regions to expand deployment as soon as technically and economically feasible so that all consumers can have access to information services.

Fifth, a few regions intend to impose limitations in state tariffs on who can purchase ONA services and how those services can be used. Such a practice detracts from the goal of open network architecture. In fact, the Commission expressly prohibits customer and use restrictions in their own Federal ONA tariffs.

Mr. Chairman, Digital believes that these concerns can be addressed by modifying the existing plans. Once this is accomplished, industry can move rapidly down the road to offering real ONA capabilities. Completing that journey, however, will require integration of new intelligent network technologies and functions. Therefore, future ONA planning must include development of intelligent network functions and ISDN features in an ONA environment. This is necessary to allow manufacturers and enhanced service providers time to plan needed products and services to support and utilize these developments.

In conclusion, Mr. Chairman, Digital believes ONA is an important step in bringing a full complement of new information services offered by a diverse set of service providers to American business and consumers alike. The problems I have outlined are obstacles that must be overcome, not as others suggest, a reason to start over and abandon two

years worth of work. The role of Congress and the Commission should be to promote those policies that will ensure that ONA succeeds for the ultimate benefit of the end users.

Thank you very much.

[The statement follows:]

STATEMENT OF W. ROBERT TIRMAN, MANAGER OF TELECOMMUNICATIONS PROGRAMS, DIGITAL EQUIPMENT CORPORATION

Mr. Chairman and members of the Subcommittee. I am W. Robert Tirman, Manager of Telecommunications Programs for Digital Equipment Corporation. I deeply appreciate the opportunity to appear today at these important hearings concerning Open Network Architecture ("ONA") plans and policies for our nation's telecommunications network.

I am particularly pleased to be here to share Digital's vision of ONA as an essential foundation for an open, intelligent highway for our country's information services. Quite simply, Digital believes that fulfillment of the Federal Communications Commission's ONA initiatives is essential to promoting economical, ubiquitous access to information services. Indeed, ONA is the key to unlocking the benefits of the Information Age for all Americans.

DIGITAL'S STAKE IN THE ONA PROCESS

Digital is the world's largest manufacturer of networked computers. The company is headquartered in Maynard, Massachusetts, and employs over 120,000 persons at 650 locations in 55 countries. Digital's products include a wide range of hardware and software systems which are integrated or used in connection with telecommunications services. Digital's interest in ONA is multifaceted. First of all, the markets Digital serves are inherently dependent upon the availability of an open, advanced telecommunications highway. As a supplier to all facets of the carrier industry, information service providers and end users, Digital also has a clear interest in achieving the FCC's goal of a pro-competitive marketplace, open fairly and fully to all potential participants. Furthermore, Digital has been at the forefront of using computer-based technology to produce advances in the efficiencies and capabilities of telecommunications networks. The company has been deeply involved in efforts to design tomorrow's intelligent telecommunications networks through a melding of computer capabilities with transmission services. Accordingly, Digital has a vital stake in the continued expansion of network features and the continued growth of a robust and highly competitive information services marketplace.

In light of these interests, Digital has taken a leading role—in policy arenas and in the marketplace—in defining and implementing ONA. Before the FCC, Digital has been an active proponent of Commission policies under which the Bell Operating Companies ("BOCs") and information service providers can harness the full capabilities of the network on a competitively equal basis. And in the marketplace, Digital has worked closely with telecommunications carriers in developing the technical underpinnings of the intelligent, open networks of the future.

OVERVIEW OF MAJOR POINTS

In discussing ONA with you today, I would like to make three basic points. First, the initial Plans filed by the BOCs represent a sound starting point for ONA. Second, the Congress should encourage the Commission, the BOCs, information service providers, manufacturers and users to work together to remedy initial shortcomings in the Plans which limit the utility, availability and attractiveness of ONA capabilities. Finally, the Congress should support Commission efforts to ensure continued progress in the form of prospective improvements in the accessability of network functions and introduction of intelligent network features—progress that holds enormous potential benefits for the industry, its customers and our country as a whole.

Let me provide you will additional detail on each of these points.

THE INITIAL ONA PLANS REPRESENT A POSITIVE FIRST STEP TOWARD ONA

Digital believes that the BOC's initial ONA Plans represent a positive first step toward the FCC's goal of an open and intelligent telecommunications highway for information services. These Plans reflect legitimate efforts to accommodate fundamental changes into a century-old telephone system. However, like any first voyage into uncharted waters, they are not free from problems.

The BOCs' initial ONA Plans have received criticism on a wide variety of fronts. While Digital shares many of those concerns, it believes the shortcomings are understandable, given the limits of technology and time. Moreover, it would be unrealistic to expect the radical changes in network architecture, with the accompanying dislocations and substantial costs, that full implementation of ONA would have required. For better or worse, the public telephone network must change on an evolutionary, not revolutionary, basis.

In addition, Digital believes that the BOCs have made good faith efforts to solicit and consider information service providers' requests and needs. The national ONA forums, regional meetings, and industry-specific dialogues that have taken place over the past year have helped move BOCs and information service providers toward a mutual understanding of the BOCs' approaches to ONA and the ultimate necessity for more fundamental changes in their networks.

Notwithstanding these efforts, however, the initial ONA Plans are not without problems. Before the BOCs and information service providers can make continued progress toward ONA, certain concerns raised by the BOC Plans need to be addressed and resolved. Let me detail those important issues and the remedial actions that should be taken.

THE COMMISSION SHOULD CORRECT CERTAIN LIMITATIONS IN THE INITIAL PLANS IN ORDER TO PAVE THE WAY FOR FURTHER PROGRESS TOWARD ONA

In five respects, the initial ONA Plans contain limitations that would impair efforts to achieve a truly Open Network Architecture. Specifically, these constraints arise because: (1) the BOCs utilize inconsistent approaches to classifying, describing, and tariffing ONA functions; (2) the absence of any pricing information in the Plans, coupled with proposed use of market pricing policies in setting rates, creates understandable concern about the ultimate real world consequences of ONA; (3) several Plans improperly seek to preclude FCC oversight of ONA tariffs; (4) piecemeal deployment of ONA services could create difficult transitional problems; and (5) some BOCs impose customer and use restrictions which would detract from ONA's benefits.

The BOCs Utilize Inconsistent Approaches to Classifying, Describing, and Tariffing ONA Functions

In order to promote some uniformity among the ONA Plans, Bellcore developed a Model that establishes a framework for classification of ONA-related functions. Under this Model, access from the information service provider's premises to the central office, certain central office functions, and transport between central offices comprise a "Basic Serving Arrangement" ("BSA"). Optional central office features obtained through BSAs are termed "Basic Service Elements" ("BSEs"). Access from the end user's premises to the central office, and associated features, are termed "Complementary Network Services" ("CNSs"). Finally, "ancillary services" are non-basic services used in support of communications, such as billing and collection.

Although each BOC generally follows the Bellcore Model, uniformity among the Plans has not been achieved. As an initial matter, the number of BSAs and BSEs varies greatly from region to region.[1] More fundamental inconsistencies arise in several respects:

First, the carriers show little consistency in their classification of functions as BSAs, BSEs, CNSs, or other services. For example, Multiple Call Forwarding (request number 95 on Bellcore's master list) is treated as a CNS by Ameritech, a BSE by Bell Atlantic NYNEX, and Southwestern Bell, a combination of services by PacTel, and an existing service by US West.[2]

Second, within the BSE category, the BOCs often employ different names to identify the same or similar functionalities. For example, Bellcore #22 (Calling Number Identification) is referred to by six different names in the seven regions. Conversely, it appears that in some cases, the same name may be used by different RBOCs to denote different functionalities.

Third, the BOCs' proposed tariffing practices very considerably. Thus, Ameritech intends to tariff ONA offerings in its federal and state access tariffs; Bell Atlantic, NYNEX, and US West will place ONA functions primarily in their state exchange tariffs; and BellSouth and Southwestern Bell seek to establish specific information service provider tariffs.

DIGITAL understands that the seven RBOCs have different central office capabilities, different marketing perspectives, and different rate structures, and accordingly require some flexibility to resolve issues according to their distinct interests. However, DIGITAL is concerned that individualized approaches to classifying, describing, and tariffing ONA functions detract from the proper view of ONA as

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[1] While the Bellcore Model contains five BSAs, the number in the Plans ranges from zero for US West, which will continue to utilize existing access arrangements, to 14 for NYNEX. The number of BSEs ranges from 20 for Southwestern Bell, to 91 for NYNEX (representing 56 different functionalities).

[2] Similar variations exist with regard to several other functions, including request numbers 1, 6, 10, 16, 22, 23, and 45 on the Bellcore list.

having national as well as regional implications. The diversity of practices discussed above will render it difficult for any information service provider to assess accurately the value of ONA offerings and to utilize those offerings efficiently in providing its own information services.

DIGITAL is encouraged that is response to this criticism the BOCs currently are undertaking efforts to develop a more uniform classification of ONA functions. More consistency is indispensable if ONA is to present the greatest value to the greatest number of people. To this, end, DIGITAL has urged that the Commission direct the BOCs and information service providers, through the Information Industry Liaison Committee ("IILC"), to develop a consistent classification of functions, and to ensure that each function name describes as particular technological capability or set capabilities.

The Absence of Any Pricing Information in the Plans, Coupled With Proposed Use of Market Pricing Policies in Setting Rates, Creates Understandable Concern About the Ultimate Real World Consequences of ONA

The initial ONA Plans do not include any information concerning prices for BSAs, BSEs or access arrangements. Although uncertainties regarding demand for new services may complicate BOC pricing decisions, the absence to pricing information creates obvious problems for information service providers who are trying to incorporate ONA offerings into their business plans. Accordingly, the Congress and the Commission should send clear messages that ONA cannot proceed in a factual vacuum with regard to charges for such carrier services.

In addition, several BOCs propose to depart from cost-based pricing with respect to interstate ONA offerings. They intend to price based on "market willingness-to-pay." This raises serious concerns that the utility of ONA will be sharply diminished by excessive rates based upon carrier discretion. ONA must be viewed as a long-term investment to promote expanded use of the network and development of substantial new revenues for BOCs. Accordingly, DIGITAL joins those asking the Congress and the Commission to make clear that cost-based pricing of ONA must remain a commonly shared basis for ONA charges.

Finally, some BOCs would impose access charges or other measured charges on information service providers seeking access to BSEs. One BOC, for example, would require interstate BSEs to be purchased through Feature Group or other usage-sensitive access arrangements, and another intends to price access under a special information service provider tariff at usage-sensitive rates. As this Subcommittee is well aware, however, the imposition to usage-sensitive access charges on information service providers would seriously injure the information services industry. Indeed, Congressional concern was instrumental in convincing the Commission to withdraw its proposal to extend access charges to information service providers. Accordingly, the BOCs should not be permitted to impose access charges through ONA tariffs.

Several Plans Improperly Seek to Preclude FCC Oversight of ONA Tariffs

The Commission's *Computer III* orders clearly envision that ONA services will be tariffed at both the federal and the state levels, depending upon the jurisdictional nature of the traffic with which the services are associated. Several Plans depart from this principle, however, by seeking to tariff many ONA offerings exclusively with the states.

DIGITAL fully appreciates that the states have a significant and legitimate interest in the ONA process. As several BOCs note, many ONA functions are similar to existing services that are tariffed at the state level. At the same time, however, DIGITAL agrees with the Commission that "[t]here is a particularly strong federal interest in permitting all enhanced services providers to utilize efficiently the capabilities of the nation's public switched network in offering their services." [3] Indeed, DIGITAL is deeply concerned that the restricted federal oversight envisioned by these BOCs would render ONA unworkable as a nationwide concept, and accordingly, thwart that important federal interest.

FCC oversight—consistent with the jurisdiction of state regulatory authorities—is necessary to bring uniformity to the ONA offerings. In addition, several BOCs intend to price their intrastate ONA offerings on an above-cost, market-priced basis. Unless interstate offerings are priced in relation to their costs, there is a serious risk that inefficient pricing of ONA will artificially suppress demand for ONA-based information services. Accordingly, DIGITAL has urged the Commission to require

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[3] Phase I Order, at ¶ 347.

the filing of cost-based federal tariffs for BSAs, BSEs, and other ONA-related services that are jurisdictionally interstate.

Piecemeal Deployment of ONA Services Could Create Difficult Transitional Problems

The availability of particular ONA functionalities under the various Plans varies markedly, both from region to region and between urban and less urban areas within each region. For example, while approximately two-thirds of the 118 information service provider requests on the Bellcore master list will be met by at least one region, only one-sixth of these request will be met by all regions, and 10 will be met by *only* one region.

To offer a viable nationwide service, an information service provider must be assured that the same technical capabilities will be available in all regions of the country. DIGITAL is therefore concerned that the current variability of the ONA Plans will undermine efforts to offer information services on a national basis. Accordingly, DIGITAL asked the Commission to require each BOC to explain why it cannot offer capabilities that will be provided by other regions, and to submit firm schedules for making such capabilities available.

With limited exceptions, the BOCs intent to deploy their initial BSEs solely in major metropolitan areas. DIGITAL fully appreciates the economic commitment necessary to support wider geographic deployment. Quite simply, it would be unrealistic to expect universal deployment within one year after Plan approval.

At the same time, however, the goal should be to roll out ONA capabilities when the underlying network can economically and technically support those services. To this end, DIGITAL has recommended that the Commission condition Plan approval on the submission of firm deployment schedules for the first year after implementation of the final set of BSEs. In addition, DIGITAL has supported the Commission's suggestion that the BOCs file annual deployment updates.

Some BOCs Impose Customer and Use Restrictions Which Would Detract from ONA's Benefits

The Commission has explained that restrictions on access to and use of communications services "often have been used by carriers as means of engaging in certain practices, such as cross-subsidization, price discrimination, and market segmentation, that generally tend to impair competition and reduce consumer welfare." [4] Accordingly, the Commission has forbidden such restrictions on interstate ONA offerings.[5] In addition, although the Commission has decided not to preempt restrictions on the availability and use of intrastate offerings, it requires "a full explanation of, and justification for, any such state-tariffed customer restrictions . . . ." [6]

Although most of the initial ONA filings are consistent with these requirements, two BOCs intend to establish customer restrictions in the form of information service provider-specific tariffs. Under this approach, information service providers will be permitted to purchase BSEs only from such tariffs even when identical functions are available, either as CNSs or otherwise, in the BOC's other offerings. Moreover, these restrictions appear to apply at the federal as well as the state level. For example, one BOC states that parallel federal and state restrictions are necessary to avoid disruptive demand shifts and revenue shortfalls.

In addition, some ONA Plans seek to impose use restrictions. One particular model state tariff provides that information service providers "are not permitted to utilize ONA Rate Elements for non-resale communication as a replacement for basic services provided under tariff by the Company."

These customer and use restrictions detract from the goal of an open network that is available to all consumers. Accordingly, DIGITAL has urged the Commission to continue to forbid such restrictions in federal ONA-related tariffs. In addition, the Commission should require any BOC seeking to include such restrictions in its state filings to provide a full explanation and justification for any such conditions.

THE CONGRESS AND THE COMMISSION SHOULD SEEK TO ENSURE CONTINUED PROGRESS IN THE FORM OF PROSPECTIVE IMPROVEMENTS IN THE ACCESSIBILITY OF NETWORK FUNCTIONS AND THE INTRODUCTION OF INTELLIGENT NETWORK FEATURES

The initial ONA Plans must be viewed as the starting point—not the finish line—in achieving the ultimate goal of an open, intelligent telecommunications highway. Indeed, in directing the BOCs to file ONA Plans setting forth an initial set of BSEs,

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[4] Phase I Further Reconsideration Order, at ¶ 64.
[5] *See, e.g.*, Phase I Further Reconsideration Order, at ¶ 77.
[6] Phase I Reconsideration Order, at ¶ 111.

the Commission emphasized that "implementation of this initial set of BSEs is merely an initial step in ONA development.[7] The February 1 filings are a commendable first step toward Open Network Architecture, which ought to be built upon, rather than discarded, as urged by others.

For example, the ONA Plans now generally require information service providers and users to buy Basic Serving Arrangements (BSAs) in order to purchase individual Basic Service Elements. Each BSA also bundles together various features and functions. In the short term, DIGITAL believes that the Basic Serving Arrangement approach seems to be warranted, given the technical problems and economic dislocations that immediate, complete unbundling would entail. In the longer term, however, greater accessibility to network functions is essential to permit truly open interconnection and a network architecture that is "self-enforcing in controlling discrimination," [8] particularly where unbundling will foster competition.

Equally important, the BOCs' future ONA planning must address the development of intelligent network architectures, and include plans for incorporation into the BOCs' networks of ISDN access. These technological advances are critical to maximizing the capabilities of the BOCs' networks and supporting the universal availability of advanced information services. Over the next decade, the goals of ONA will not be fully realized until these new architectures and access arrangements have been implemented.

DIGITAL believes the Congress and the Commission should create incentives for greater accessibility to network functions through the implementation of intelligent network architectures and ISDN. Achievement of these objectives will enable new and innovative information services for the benefit of the industry, its customers, and our country as a whole. In other words, the Plans now before the FCC must be viewed as simply the beginning—not the end—of the important ONA process.

CONCLUSION

DIGITAL believes the ONA process set in motion by the Federal Communications Commission holds tremendous promise for our nation. The cooperative efforts of the entire communications industry, encouraged and guided by the Congress and the Commission, should result in the evolution of a truly open and intelligent telecommunications highway for advanced information services. Once achieved, this Open Network Architecture will afford all Americans ubiquitous, economical, and non-discriminatory access to the Information Age.

Thank you.

Senator INOUYE. Thank you, Mr. Tirman.

I have a few questions here and if any of you would like to comment or respond, you are welcome, sir.

Should access to BSEs be limited to ESPs or should they be open to any user?

Mr. WEBB. If I may, Senator, our view is that the policy already at the Federal level is not to put user restrictions on various Federally tariffed services. That is generally our practice at the state level as well. In this instance, I think it would be impractical to try to put in a user restriction because we, in our market outreach process, have found it very difficult to identify who is an ESP. The gamut of companies participating in this industry is broad and there is no common definition that could be the basis for a user restriction.

Senator INOUYE. Anybody else?

Mr. MILLARD. Mr. Chairman, Ameritech also believes that user restrictions are not appropriate. The filings, the ONA filings indicate that one of the regional companies placed some user restrictions, that issue is still being discussed at the FCC.

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[7] Phase I Reconsideration Order, at ¶ 142.
[8] Phase I Order, 104 F.C.C.2d at 1063.

We have found that user restrictions serve little purpose other than attempt to build additional cross-subsidy mechanisms limited to individual classes of customers, which in a competitive environment cannot be identified and enforced in any event.

Such restrictions typically are also inimical to the development of the truly competitive environment and for that reason we do not believe they are appropriate in an ONA plan.

Senator INOUYE. Consumers are very important. What effect should the ONA plans have on residential ratepayers? Should they bear part of the burden or none of the burden?

Mr. MILLARD. Mr. Chairman, we believe that depends on how the ONA process is administered and ultimately deployed. If it is deployed in a defective fashion, such that the existing cross-subsidies are unraveled in too fast of a fashion, such that unwarranted investment is made, the local ratepayer will suffer. If ONA is implemented in a proper, prompt fashion, we expect that the local ratepayer will benefit several ways.

First, the local ratepayer will have access, as do customers in other countries, to a wider array of information services that today are denied them on a cost effective basis.

Secondly, the most efficient use of our networks and the revenues generated by that use should make it possible for us to keep the local ratepayers' rates at today's levels or lower if the type of usage we expect to materialize in fact does.

If implemented properly, information services should only benefit, not harm local ratepayers.

Senator INOUYE. Other views?

Mr. WALKER. Mr. Chairman, we do not in our review of ONA see any reason to expect that it would create any adverse impact upon the local ratepayers. To the contrary, I would agree with Mr. Millard that if it is done properly, it will facilitate the development of information services that will benefit the consumer both in terms of the information service that he is able to obtain, and in terms of the additional usage of the network that he will create.

Senator INOUYE. Mr. Webb, listening to Mr. Walker, I gather that he does not agree with any of the BOC plans. You have indicated, together with Mr. Millard, that time may be of the essence and we should not waste any time and adopt these plans. Do you have any comments to make to Mr. Walker and Mr. Tirman's suggestion that these plans should be amended?

Mr. WEBB. Well in fact, I think Mr. Walker in his testimony did make polite comments about both NYNEX's plan and Ameritech's, that we seem to be much closer together than he may be with some of the other regional plans. And as I mentioned in my preliminary statement, Mr. Walker's company was one of the parties to a joint motion that set forth some guidelines they thought the FCC should follow on ONA. We looked at those and largely agree with those principles and are encouraging the FCC to consider them. So I do not think the distance is as great as might be perceived.

Senator INOUYE. Are you satisfied with Mr. Tirman's suggestion for changes?

Mr. WEBB. Actually most of the points that Mr. Tirman was talking about are ones that are consistent with the NYNEX plan. We have in fact proposed tariffing both at the state and Federal level, depending on the appropriate jurisdictions. We have not proposed access charges for ESPs. We have not proposed user restrictions. So I felt very comfortable with his statement to the extent that I understand all of his points.

Senator INOUYE. Most witnesses have spoken of discrimination and some have suggested that a little discrimination may be necessary to keep down costs. Do you have any comments?

Mr. WEBB. I am not sure I understand the question, Senator, because in our view we have gone to great lengths to make sure that the anti-discriminatory policy of the FCC has been incorporated into our plan.

Senator INOUYE. Well some have suggested, like Mr. Walker I believe, that these ONA plans incorporate certain built-in discrimination with regard to use of the central office for example. What do you think about that?

Mr. WEBB. With respect to the particular issue of co-location and use of the central office, we think that we have mooted that issue with our proposals by ensuring technical parity and also pricing parity for any services the telephone companies use when offering an enhanced service. And that sidesteps the operational problems and the other security and space problems we have always had with co-location. It also sidesteps the possible detrimental effects to ratepayers that the pricing advantages, that might be achieved through co-location could have. So we think we have mooted the co-location issue here.

As far as customer proprietary network information, which was one of the other issues he referred to, that has been hassled through by the FCC a great deal. We believe that customers who want other providers to have access to their private telephone records should get them, and there is a process in place to make that happen. And what we have proposed to the FCC is consistent with how they have come out on that issue.

Senator INOUYE. Mr. Walker?

Mr. WALKER. Well, we would not fully agree with all those comments. On co-location, there are two viable approaches, both of which are non-discriminatory. You either permit competitors to co-locate in the central office, as U.S. West has a corporate policy saying they will do where it is feasible, or you do not let your own ESP affiliate co-locate there, which is the approach that Ameritech has taken. Either of those provides non-discrimination. Two of the regions are following one or the other of those approaches. The other five regions are following what we think is a clearly discriminatory approach of permitting their own enhanced service operation to co-locate, but not permitting competitors.

Now if you are going to deny co-location to competitors, it is certainly true that pricing parity is absolutely essential, and NYNEX does provide pricing parity, unlike a couple of the other regions. But there

are other non-price aspects to co-location, such as operational and technical advantages, and scheduling issues with respect to obtaining facilities, that we think are important. So we have urged the FCC, in our ONA Comments, to take another look at this and to revisit the question whether some further regulatory guidance on that subject is not needed.

Likewise, with respect to CPNI, it is true that all seven of the regions are currently following the FCC rule. The problem is that the rule is inherently discriminatory, and so we have asked the Commission to revisit the rule. And that was the suggestion I made in my comments earlier, that this subcommittee could be very helpful in expressing its concern on this subject and urging the Commission to revisit those aspects of its policy where it has said it wants non-discrimination but it has not put ground rules in place to achieve it.

Senator INOUYE. Should the FCC preempt state action if they feel that state regulators are frustrating ONA policy?

Mr. WALKER. I personally doubt that much of that will be needed. It seems to us that if the FCC sets up an adequate structure at the Federal level, and has full Federal tariffs for interstate use of ONA which comply with that structure, for the most part the states will not end up with positions that are that far apart. And even where they are, I think those things can probably be worked out.

Mr. WEBB. I believe there is going to be an incentive for state regulators to see ONA, as it has been proposed, actually function well because of the additional services it will bring to their consumer constituents and also the support it can give to basic rates. Our approach has been that tariffing should be handled as services are tariffed now in the appropriate jurisdiction depending on whatever use determines that to be. So I do not think that the conflict with the states is going to be great.

Senator INOUYE. What impact would the plan have on international competition, if any?

Mr. WEBB. My answer would be much the same as Secretary Sikes. He spoke in terms of electronic tools for American businesses, particularly with the small businesses who are not presently the recipients of many information age services. I think ONA and the new opening up of access of those tools to them will make those companies more competitive.

Senator INOUYE. And finally, at this stage, do you believe there is any need or justification for the Congress to legislate and participate in this process or should we just sit by and observe?

Mr. TIRMAN. Mr. Chairman, I do not think at this point there is any need for Congress to actively get involved. On the other hand, the industry I believe, as you have heard today, is interested in working these things out together under the guidance and auspices of the FCC. The role that you are taking now I think is appropriate in following the developments and being aware of what the potential issues are down the road that could be troublesome and I think in the short term that is an appropriate role for the Congress to take at this time.

Senator INOUYE. Mr. Walker?

Mr. WALKER. We do not see the need for legislation at this point, Mr. Chairman, but we do strongly support your continued oversight in this area and as I have indicated, we feel that there are some specific areas in which informal guidance from the subcommittee could be useful.

Senator INOUYE. Do you agree with all of that?

Mr. MILLARD. Mr. Chairman, I think I would agree with the other panelists that Congressional action in the ONA area is not necessary. We are already having as much micro-management in this technical area as we can deal with.

In another area that is equally responsible for our tardiness in providing these services, the modification of final judgment, we think that Congressional action is long overdue. We have a judge that has got a record that is almost 20 years out of date with an understanding that is not that current on these services that is micro-managing them. And we believe that with all the good intentions of the FCC, that we still may have some significant roadblocks there, and we think it is time that Congress acts to get at least one player out of this crucial area.

Senator INOUYE. As far as I am concerned, to the extent possible, it would be desirable that industry, together with consumers, decide what the plan should be. After all, if you want us to involve ourselves, what you see is what you will get. That is me and the staff back here, and although we may be committed and dedicated, we know very little about what is before us.

If you want a group of people of magnificent dedication who know very little about industry deciding and micro-managing your industry, just prolong this and fight among yourselves, and you will see us get into action.

So if I may suggest, now is the time for all good people to get together.

And I thank you all for helping us this morning. It has been extremely helpful. We will, as suggested by Mr. Walker, continue our oversight responsibilities and monitor the process as it moves along.

Thank you very much.

[Whereupon, at 11:32 a.m., the subcommittee recessed.]

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF SOUTHWESTERN BELL TELEPHONE COMPANY

Southwestern Bell Telephone Company thanks the Senate Subcommittee for allowing us to make known our views on Open Network Architecture (ONA) through the filing of this brief written testimony. At Southwestern Bell, we have great interest in the testimony of those personally appearing before the Subcommittee on July 14. From our vantage point as an interested observer of those hearings, three common themes ring clear. It is with respect to these three themes that Southwestern Bell limits this testimony.

THE INFORMATION SERVICES INDUSTRY NEEDS ONA NOW

There is virtually no disagreement that ONA can be the catalyst for the rapid expansion of the information services industry in this country. Furthermore, the hearing participants made clear that each day delayed in making ONA a reality means lost opportunities for U.S. businesses and consumers. ONA is essentially a form of "equal access" for the information industry and as such should be pursued expeditiously.

The FCC has before it reasonable proposals which fulfill every aspect of its ONA agenda. Southwestern Bell urges that the information services industry in this country not be held hostage by those who would argue each and every aspect of the Bell operating companies' (BOCs) ONA plans. The FCC and the BOCs simply must be permitted to go forward swiftly with ONA implementation if Information Age services are to become available to not only big business but to common American households as well.

ONA SHOULD NOT HARM BASIC CUSTOMERS

In discussing ONA, two policy objectives were emphasized continually by hearing participants. Southwestern Bell stresses that an appropriate balancing of these objectives is essential to the success of ONA.

First, an approach must be fashioned which will truly stimulate the growth of information services. Southwestern Bell's ONA Plan fulfills this objective by unbundling needed functions and providing non-discriminatory interconnection access and pricing. Enhanced service providers should not be asked to bear costs which BOCs incur for the benefit of others.

Second, attainment of the industry goal regarding information services growth must not jeopardize existing services and rates for the local basic service customer. A rational approach requires that the cost of ONA services be borne by those who will benefit from such services. Tariffing and pricing of ONA services must ensure that existing local basic service customers will not subsidize information services and that costs resulting from ONA can and will be assumed by the enhanced services industry. Not surprisingly, enhanced service providers do not wish to pay the usage-sensitive prices necessary to ensure that existing local service customers do not shoulder the cost of ONA, but the regulators must not forsake Universal Service for the benefit of enhanced service providers.

THE INDUSTRY CAN RESOLVE THE REMAINING ONA ISSUES

As several hearing participants have urged, government intervention is unnecessary to resolve remaining ONA issues. Indeed, Southwestern Bell has every incentive to work cooperatively with the information services industry to achieve successful deployment of ONA. Such deployment represents additional revenues to Southwestern Bell resulting from increased use of the basic network.

Southwestern Bell agrees with Senator Inouye that "Now is the time for all good people to get together." Southwestern Bell views the last eighteen months as an unprecedented period in terms of industry dialogue on issues of mutual importance and believes that such continued dialogue can effectively resolve those issues still outstanding.

BELLSOUTH

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July 26, 1988

The Honorable Daniel K. Inouye
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Dear Mr. Chairman:

Your recent hearing titled "Hearing on Modified Final Judgment (MFJ) and Open Network Architecture (ONA)" provided a valuable forum on essential telecommunications issues. Unfortunately, little time was able to be devoted to the MFJ issues that continue to limit BellSouth's and other Bell holding companies' ability to provide information services to the American public on a mass scale.

BellSouth believes it is no exaggeration to say that the Information Age, properly addressed, is the most compelling strategic opportunity our nation has for improving its competitive position in international trade.

However, there is a problem. Unlike the District Court, which has responsibility for administering the MFJ, we believe the Information Age is more likely to develop if the Bell holding companies are free to fully and actively participate in the information services market. To obtain this freedom, the MFJ proscriptions on manufacturing, generation and manipulation of information content, and interexchange services must be eliminated and replaced with safeguards developed by the FCC with appropriate congressional oversight.

One of the safeguards related to Bell entry into information service markets already developed by the FCC is Open Network Architecture (ONA). ONA plans have been filed with the FCC by all Bell companies and AT&T.

The goal of ONA is to "open" the telephone companies' networks so that enhanced or information services can be provided efficiently both by telephone companies and their competitors. ONA also is designed to prevent Bell companies and AT&T from discriminating against enhanced service provider competitors who rely on regulated telecommunications services to deliver their services to consumers.

BellSouth's plan, which was filed with the FCC last February, is designed to ensure that no discrimination will exist between BellSouth's enhanced service offerings and those of its competitor Enhanced Service Providers (ESPs).

However, BellSouth's ONA plan is also designed to strike a balance and take into account other vital interests. Specifically, BellSouth's plan will ensure that ESPs, including BellSouth's own ESP operations will pay the costs of additional usage of the local network--not local ratepayers who may not use such services. BellSouth has conducted a careful analysis of what will happen if the network is totally unbundled and repriced as some in the ESP industry have advocated. Our calculations show that the ultimate potential revenue impact on the local ratepayer from "tariff shopping" and arbitrage (in a worst case scenario) exceeds $4 billion dollars. This translates into a substantial increase per access line per month for each ratepayer.

Most ESPs today (particularly the value-added networks (VANAs) like Telenet) obtain service from the BOCs' local exchange tariffs. Typically, they purchase the cheapest available flat rate business line, $30-45/month, and collect in excess of 100 hours of usage per month over these lines. This is significantly higher usage than the average business consumer. Moreover, unlike the average consumer, the ESPs pay no toll charges, no state and no federal access charges. In addition, in the BellSouth region, these ESPs do not pay on a local measured service basis. Thus, the ESPs' use of the local network today is already subsidized by local ratepayers.

BellSouth believes that these pricing anomalies of the past must be corrected. Our solution is to offer the new network capabilities used to provide information services to ESPs in a new model local exchange tariff. This tariff will provide for recovering local costs by measuring usage. The new network capabilities will be associated with this new tariff.

BellSouth strongly opposes any rate structure which allows increased usage of its local network with no corresponding way to recover increased costs. Additionally, BellSouth strongly opposes a rate structure which allows ESPs to obtain new network capabilities and to combine them with existing subsidized flat rate local services utitlized by the ESPs today.

BellSouth is committed to making the Information Age a reality, but not at the expense of the local ratepayer. We support the FCC's ONA proceeding, and believe that the Commission should recognize that these pricing issues discussed above are matters which should be resolved by the states.

I would appreciate this letter being made a part of the hearing record. If we can be of further assistance in this matter we, of course, will be pleased to oblige.

Sincerely yours,

Mickey McGuire

STATEMENT OF THE ASSOCIATION OF TELEMESSAGING SERVICES, INTERNATIONAL

I. THE TELEMESSAGING SERVICES INDUSTRY

The Association of Telemessaging Services International (ATSI) is the the trade association for the telephone messaging service bureaus. Its members provide a wide array of messaging services, including the traditional, live operator handled Telephone Answering Service (or TAS), and automated voice storage and retrieval services. (The association was formerly called Associated Telephone Answering Exchanges, or ATAE, and has submitted testimony to the commitee under that name.)

Today, there are approximately 4,200 messaging service bureaus in the United States. They serve some 1.4 million customers in a myriad of businesses and professions, as well as residences, and answer some 860 million calls per year. The messaging industry employs about 37,000 people and generates $712,000,000 per year in revenue.

Messaging bureaus are primarily small, privately owned and owner-managed local businesses. The basic service offering generally is a message service in which a live operator answers a client's telephone line, and takes a message in accordance with prearranged customer instructions. Increasingly, messaging bureaus are providing both automated and human assisted voice message storage services.

Throughout the history of the industry, messaging bureaus have been totally dependent upon the local telephone company for the facilities and services necessary to conduct their businesses. While many telecommunications users are able to implement new technologies to bypass the basic telephone network and reduce their dependence upon telephone company facilities, messaging bureaus remain fully dependent upon their serving telephone companies for the provision of network facilities and services. Messaging bureaus must be able to answer, on their clients' behalf, calls originating from any point in the public switched network, making private network arrangements unviable. None of the so-called bypass technologies offers any significant potential for the messaging industry. Messaging bureaus will remain dependent upon their serving telephone company's monopoly provision of essential facilities for the forseeable future.

II. THE IMPACT OF GREENE'S RULING

The messaging industry will be directly and immediately impacted by Judge Harold H. Greene's March 7, 1988 decision, allowing the Bell Operating Companies to offer voice messaging services. Four of the seven regional Bell Operating Companies have announced plans to offer voice services which are directly competitive with services offered by ATSI members.

These independent service bureaus can compete effectively, but only if there are sound regulatory and legislative safeguards in place that require full and fair competition and these safeguards are vigoursly monitored and enforced. The messaging industry remains very concerned that safeguards currently in place (primarily the Federal Communications Commission Computer III rules) are incomplete and untested: their adequacy in the marketplace is doubtful. Moreover, certain key areas (particularly rules governing BOC use of Customer Proprietary Network Information or CPNI), are flawed, and give FCC sanctioned advantages to the BOCs which eliminate any reasonable possibility of fair competition.

In short, the Congress cannot reasonably expect that a fully open and fair market for competitive messaging services will exist after the entry of the monopoly telephone companies.

III. AVAILABILITY OF MESSAGING SERVICES

This issue is particularly troubling to the industry since the decisions by Judge Greene and the Commission to allow BOC entry into these markets is based upon the entirely erroneous assumption that without the BOCs' participation, the general public (particularly small business and residential customers) will be denied the availability of voice messaging services. Under this inaccurate view, the risk of allowing the BOCs to combine monopoly and competitive services (a combination which has always spelled disaster to competition in the past) is a risk worth taking, in order that more consumers may have service available to them. Ellis Booker, editor of the highly regarded Telephony magazine goes so far as to say (in the March 21, 1988 issue's editorial) that as a result of Greene's order allowing the BOCs into this market "some small answering service bureaus will likely go under...an unfortunate result, but a reasonable trade-off, given the benefits of widespread voice messaging service."

Contrary to these views, there is a vigorous and growing voice messaging market: over 200 computerized voice messaging bureaus operate in the U. S. today. Some twenty-nine companies manufacture equipment used by large corporations to provide voice messaging services to themselves, and by service bureaus to provide voice messaging services to small businesses and residential customers on a cost-effective and economical basis.

The only thing preventing wider availability of these services to small business and residential users is the regional operating companies' persistent refusal to provide messaging bureaus with the necessary network connections which would make more widespread service possible.

In 1980 (prior to divestiture) AT&T planned to offer a voice messaging service called Custom Calling Services II (or CCSII). At that time, AT&T planned and developed enhancements in the public telephone network's switching capabilities to be available only to its own Bell System companies and denied to its answering service competitors. These enhancements of the network made it possible for any customer with a touch-tone telephone to initiate and terminate answering service instantly. Other attractive service features which were programmed into the network included: allowing the customer to designate a specific number of rings (0 to 7), after which any unanswered call would be routed to the voice storage machinery; special "ring-back" and a distinctive dial-tone alarm to alert a customer that he had calls waiting in storage; an automatic transfer of calls if the customer's line was busy; and others.

There is evidence included in the pleadings surrounding the FCC's Second Computer Inquiry that AT&T could have designed these network features to allow competitive voice messaging bureaus to access customers in the same, very effective manner. However, AT&T chose instead a closed network design to achieve competitive advantages for its own answering service (as shown in Attachment I, a sworn affidavit by one of the Bell Lab engineers who designed AT&T's CCS II services. In its own CCS II pleadings before the FCC, AT&T never disputed that it was technically feasible to design network interfaces which would have allowed multiple providers of voice messaging services, rather than the telco-only design it had elected to pursue.)

The FCC rejected AT&T's petition to offer CCSII in this blatantly anticompetitive manner. They ordered the telcos to offer competitors the same interconnection and public switched network support that they planned to provide for their own offering. However, rather than compete in this manner, the BOCs chose to stay out of the market altogether. Moreover, they failed to offer any of the network enhancements which would have improved the abilities of independent messaging bureaus to reach the American public more efficiently and economically.

ATSI has been actively urging the telephone companies to offer CCSII-like interconnection for the telephone messaging industry since 1980. Prior to divestiture, the association (then called ATAE) conducted telephone company liaison on a national basis through AT&T. Attachment II of this testimony is a letter dated March 6, 1981, from AT&T, summarizing those issues which the company acknowledged as pending, messaging industry requests, still requiring an answer from AT&T. Several of the items listed address specific features requested in order for messaging bureau's to be able to provide CCS II-

like functionality (for example, item twelve). The final item, number sixteen, plainly lists messaging industry provision of CCS II as an request made of but, as yet unanswered by AT&T. The association has continued to press for this interconnection in every available forum.

Nonetheless, it is only today, in the Open Network Architecture Plans, that some of these public network enhancements beginning (in severely limited form) to become available, and only in areas where the BOCs themselves intend to compete. We can only conclude that the telcos have withheld these technically feasible interconnection features pending their own entry into the messaging market.

Quite simply, Regional Company provision of available technology...not Regional Company participation in the messaging market...is all that is required for these services to achieve their full potential.

By this decade-long withholding of necessary interconnections, the BOCs have restrained the independent messaging industry's ability to reach and serve customers until this very lack of service could be used to justify BOC entry into the market.

IV. ADEQUACY OF SAFEGUARDS

When divestiture of the Bell System was first proposed, this painfully extreme judicial remedy was deemed necessary because of the inability of regulatory agencies to prevent anticompetitive actions. When approving divestiture in 1983, the court reiterated this unfortunate fact of life, noting that "The evidence adduced during the AT&T trial indicates that the Bell System has been neither effectively regulated nor fully subject to competition. The FCC officials themselves acknowledge their regulation has been woefully inadequate." The court went on to conclude that "future regulatory remedies are unlikely to be more successful than were similar efforts in the past." (552 F. Supp. at 170).

During the past year, however, the Department of Justice, the FCC, and Judge Greene himself appear to have experienced some miraculous rebirth of faith in the efficacy of regulation. On the basis of recent FCC Computer III decisions, it is argued that Open Network Architecture (ONA) ensures equal access rights; other "non-structural safeguards" required by the commission prevent discrimination by the BOCs and cost allocation rules eliminate the possibility of BOCs using monopoly revenues to cross-subsidize their competitive offerings.

This new-found confidence in regulatory mechanisms is clearly premature and misplaced.

ATSI has actively and constructively engaged in Commission efforts to create a level playing field for all competitors. We will continue to do so. Nonetheless, these regulatory safeguards are not yet fully developed and are untested. In some instances, they are seriously flawed, consciously unlevelling the playing field to the BOCs' advantage.

V. ONA

Conceptually, accomplishing Open Network Architecture (ONA) would significantly reduce the BOCs' ability to undermine competition. An open network would, in theory, permit all competitors fair and open access to carrier services suited to their own competitive needs, rather than continue the local telephone company's total control of how all players achieve interconnection. But even the BOCs themselves concede that transforming this ideal of a flexible, open network into reality will be a major challenge, facing many obstacles and taking years to implement.

The initial ONA plans, filed February 1, 1988, may represent a legitimate first step toward ONA, but they fall far, far short of the regulatory goal. They contain nothing more than a "repackaging" of existing network services, rather than offering any new "openness" in the network. Moreover, many aspects of the plans are clearly counter to the end goals of the policy, and evidence continuing efforts by the BOCs to leverage their control of the network in a discriminatory manner.

The most blatant example of this is contained in BellSouth's ONA plan. Messaging service providers in the BellSouth region have always taken interconnection under ordinary business line tariffs. Now, as BellSouth itself prepares to enter the voice messaging marketplace, it has decided unilaterally to change this tariff treatment by establishing a separate tariff section applicable only to enhanced service providers. BellSouth offers no explanation for this change, except to say that "since the rates for regulated services are dependent on several factors, including market demand, willingness to pay studies, and revenue requirements, some capabilities may not be properly priced for ESPs' use. Conversely, prices that are proper for ESPs' use may not be proper for other uses." ATSI believes that BellSouth's concern for "improper" prices... a concern which arose only when the telephone company itself decided to enter the marketplace...serves an impermissible strategic objective:

Although the new tariff section will apply both to BellSouth's own voice messaging operations and its competitors, the new, higher rates will disrupt competitive providers' operations, giving their existing customers an incentive to shop around for a new service provider...such as BellSouth.

Another critical flaw in ONA is the fact that the limited interconnection features which are included in the plans will be available only in a few locations (primarily, the large metropolitan areas which the BOCs serve).

The very limited geographic area in which ONA interconnection services will be available is further evidence that it is the telephone companies' failure to provide necessary network connections, not regulatory or legal barriers to BOC provision of voice services, that have limited the availability of these services.

Before an ONA service's availabilty will be expanded into new areas, and before new features are introduced, the BOCs require that information service providers demonstrate that there is adequate demand for the interconnection feature in that market area.

While this may sound like a fairly reasonable requirement on the surface, consider its competitive implications. Suppose an independent voice messaging service provider wishes to introduce service in a locality where the telephone network is not equipped to support voice messaging. This entrepreneur must take a concrete business plan to the telco, convincingly demonstrating that there is a significant volume of demand for messaging service in the area. He must make this showing to the same company which is likely to be his most serious competition!

The telephone company, on the other hand, must make no such public demonstration of a market's existence in advance of its entry into messaging or any other information service operation. It merely makes the network ready and starts selling its competitive service.

Because of the closed nature in which telephone company decisions are made, a voice messaging provider may be told his request for interconnection services is denied because there is not sufficient demand for the service, only to discover six months or a year later, when the telco is ready to offer its own voice service in the locality, that adequate demand now exists.

There are, in fact, two ONAs. One is the end goal: a network that is open and flexible enough so that the network's

custodians (the BOCs) can no longer interfere with how other service providers interact with their customers via the telephone network. ATSI will continue to devote substantial effort towards accomplishing this goal.

The other ONA is really just the process: the long and difficult struggle to move toward true ONA and resolve the many difficulties (such as the BellSouth example cited above) which stand between openness and the closed, monopoly control of the BOCs.

The process is important, and the fact that the BOCs are, in fact, engaging the information services industry in ONA discussions is, in and of itself, an important step forward.

But the process is not the goal. And, unfortunately, many policymakers in Washington, seeing that industry has launched into the process, they assume that the danger of discriminatory access has been resolved. This is wishful and dangerous thinking.

VI. CROSS SUBSIDY ISSUES

The BOCs have significant ability to cross subsidize their voice messaging operations with revenues obtained from monopoly service rate payers. Dr. Peter Huber, the consultant retained by the Department of Justice in 1987 to evaluate whether the BOCs retained their monopoly, notes that BOC voice messaging services are particularly vulnerable to anticompetitive cross subsidies. In his report, The Geodesic Network, Dr. Huber reports that:

- "Over half of a BOC's (voice messaging) costs would be potentially shiftable to the regulated business."
- "Attribution of costs incurred for VSR (Voice Storage and Retrieval) to regulated activities would be difficult to detect."
- "If...potentially shared cost categories were inflated by just 1% through cross subsidy, the VSR operations costs would be reduced by $3.5 million.. .clearly, enough of the regulated entity's costs fall in potentially shared categories to allow cross subsidies on a large scale in absolute terms."

The Huber report shows large common costs, enormous competitive consequences from miniscule percentage shifts in costs and tremendous detection problems if the BOCs are permitted to combine monopoly and competitive services.

The FCC has established new, joint cost allocation rules intended to prevent cross subsidy. However, the effectiveness of these rules is entirely dependent upon vigorous and effective enforcement by the FCC. At the very meeting in which these rules were adopted, Commissioners Quello, Dennis, and Dawson all expressed concern that the Commission hadn't the wherewithal to effectively enforce them. Commissioner Quello noted that the rules required turning the FCC into a "mini IRS."

The Government Accounting Office, at the direction of Representatives Markey and Synar, undertook an evaluation of the FCC's ability to enforce its new, cost accounting rules. In its report (released the first week of November 1987), the GAO concluded that "the level of oversight that the FCC is prepared to provide will not, in GAO's opinion, provide telephone rate payers or competition positive assurance that the FCC cost allocation rules are properly controlling cross subsidy." It found the FCC capable of performing an audit of phone company activities in a given area only once every 16 years!

In the absence of even a cursory enforcement mechanism, the existence of an FCC policy against cross subsidy does little to reassure us.

VII. CUSTOMER PROPRIETARY NETWORK INFORMATION

The questionable ability of existing regulation to accomplish stated, pro-competitive goals is troublesome. However, more troublesome are areas in which the FCC has sanctioned patently anticompetitive advantages for the BOCs. The most egregious example of this is the FCC's rules regarding Customer Proprietary Network Information (CPNI).

CPNI is the information in the BOCs' records on basic telephone service subscribers, including data on the type of monopoly services ordered by the customers; traffic studies revealing such data as customers' calling patterns, number of unanswered or busy calls; credit information, such as customer's telephone bill payment history; etc.

Current FCC rules allow the BOCs' competitive, enhanced service marketers unrestricted access to CPNI in order to

market their voice messaging services, unless a customer specifically requests, in writing, that his records be restricted. (The BOCs are under no obligation to even inform residential and single line business customers that they have a right to request this protection).

On the other hand, competitive messaging service providers have no access to CPNI unless they obtain advanced, written approval from each customer.

The BOCs' enhanced service operations have instant access to CPNI of all basic phone service subscribers, giving them the ability to identify probable candidates for its voice messaging services. The BOCs' competitors, on the other hand, must attempt to qualify the potential market without benefit of such valuable intelligence before they can even ask for access to the CPNI which will validate preliminary judgements of an individual's or business' market potential.

This unfair advantage is particularly troublesome with respect to new basic service installations. BOC voice messaging personnel will, as a result of their unrestricted and exclusive access to BOC basic service CPNI, be in a position to contact the new basic service subscriber and make a sale before competing voice service providers can even learn of the new subscriber's presence in the market. The FCC even encourages joint marketing by the BOC of their monopoly and competitive telephone services. Voice messaging marketers in the telco need only sit and wait for prime, new candidates for voice services (new basic phone service customers) to come to them.

These advantages further accrue to the BOCs' benefit when attempting to market a radically new technology or service concept, like voice messaging, which is not widely recognized or understood by the general public. Special free or reduced cost trials are a critical tool in gaining customer understanding and acceptance of the new service concept. The BOCs' presumptive access to basic service subscribers' CPNI gives them an insurmountable head start in making the trial offer needed to capture the market. The current regulations concerning access to CPNI effectively grant the BOCs the first approach to basic service subscribers and leave competitors access only to those individuals who have already refused an offer of the same service from their serving telephone company.

The messaging industry's vulnerability to anticompetitive actions by the local exchange carriers is further heightened by the fact that messaging bureaus can take no effective measures to protect sensitive and proprietary information on its own operations from its serving telephone company's competing messaging service operations. This is the case because critical

information on the messaging bureau's operations are to be gained from the CPNI of the messaging bureau's customers, not the bureau itself. The messaging bureau can direct a BOC not to make its own CPNI available to the BOC's competitive operations, but to effectively protect its sensitive and proprietary information, the bureau must take steps to insure that each and every one of its customers makes the same request to the BOC. This imposes a heavy burden on a bureau in order to protect vital and proprietary information on its own business operations; a burden which, as a practical matter, it would be impossible to meet.

Beyond the concerns of the BOCs' competitors, the current CPNI rules seriously jeopardize basic telephone subscribers' privacy rights.

In the spring of 1986, Pacific Bell was ordered by the California Public Utilities Commission to cease what the regulators termed "abusive sales practices", such as adding on charges for telephone services which the subscriber did not order. Bell Atlantic currently faces charges by the Pennsylvania attorney general for using "deceptive techniques" to sell optional telephone services. According to the attorney general's office, in 23 of 32 inquiries to Bell Telephone marketers, sales representatives added unwanted services to the order without informing the caller that they were optional.

As the BOCs expand their menu of competitive services, the danger of unfettered access by over eager telco marketers to monopoly phone subscribers' records will only increase.

VIII. OTHER AREAS OF DISCRIMINATION

The FCC rules also fail to restrict, if they do not actually condone, BOCs use of billing for monopoly local exchange services to discriminate against competing voice messaging service providers by:

- marketing their affiliated messaging services through inserts in bills for monopoly telephone service;
- consolidating billing for voice messaging service and monopoly telephone service;
- using regulated telephone personnel for collection purposes; and
- waiving telephone installation or termination charges for voice messaging customers.

Competing vendors, in contrast, must replicate the entire billing process, incurring substantial additional expenses. The Regional Companies' ability to avoid these expenses is not an efficiency of their messaging operations, but an outgrowth of their local exchange monopoly.

There are other areas which could be elaborated upon in which the potential for discrimination is very real, such as joint marketing by the telco of basic/enhanced services, discriminatory access to automated ordering procedures, etc.

IX. CONCLUSIONS

Allowing monopoly and competitive services to be combined is a risky proposition. Allowing the monopoly, local exchange carriers (such as the BOCs) to offer voice messaging services creates just such a situation: unaffiliated voice messaging providers are to compete with the very companies upon which they depend for their very means of operation.

If competition is to exist under these circumstances, safeguards must exist in fact, not merely in concept to prevent abuse by the telco of the monopoly that they still control.

Many of the so-called safeguards now in place to achieve a level playing field for all competitors (such as cost accounting rules) are new and untested. Others, such as Open Network Architecture, exist in concept only, and are many years away from practical implementation. Still others, such as CPNI rules, are clearly flawed, conveying insuperable and unfair advantages to the telco monopolist.

Merely saying that the playing field must be level doesn't make it so.

Competition in the messaging market is at jeopardy. Current rules allow telephone company entry into a competitive, messaging market with the significant potential for extending their monopoly by crushing that competition.

Effective and meaningful safeguards to fair competition must be put in place, and made effective immediately.